THE
DIETETIC AND HYGIENIC GAZETTE

A Monthly Journal of Individual and Public Health.

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Vol. XXX. AUGUST, 1914 No. VIII

EDITORIALS.

THE NEW DISINFECTION.

THERE would appear to the man on the street to be nothing of human interest, nothing spectacular, and to the woman in the wrapper nothing romantic about disinfection. No work on this subject could conceivably be a best seller, unless it had application to the social evil or something like that. And yet to the physician the train of events culminating in disinfection are likely to be the profoundest in human life, relations and fortunes. To the health official disinfection is a subject important in the public service inversely as the laity are likely to find it malodorous.

The newer disinfection—the killing off or rendering impotent the germs of a given disease in homes which it has invaded—has come about through newer knowledge gained in the last half century as to how infectious diseases (yellow fever, typhoid, malaria, measles tuberculosis and so on) are transmitted to humankind. Doctors still well in middle life will recall when a saucer containing a solution of carbolic acid placed in the sick room was considered a potent preventive of such infections as diphtheria, scarlet fever and measles. When epidemics of yellow jack threatened our ports a great deal of property and merchandise was confiscated by quarantine authorities, on the erroneous theory that fabrics (fomites) contained and conveyed the germ of that dreadful disease. And comic relief was afforded in the situation by an official kiting through railway cars that had come up from our Southland with something burning in his hand under the obsession that the car would thus be rendered free of the yellow fever virus. Yet everybody knows that yellow fever is transmitted only and solely by a special kind of mosquito; malaria only by another kind of mosquito, and never in any other way—certainly not by bad air (*malaria*); the body louse transmits typhus fever: such diseases are not directly from one person to another but by such intermediaries as these. Cholera and typhoid fever are not contracted through atmospheric effluvia but solely by swallowing their essential germs in impregnated food and drink. Diphtheria is probably communicable through the air; but only by direct contact with the sick, as in kissing; or by contact of the mouth and nasal surfaces with the diphtheria germ One need apprehend nothing from the air of a diphtheria patient's sick room, but only from substances contaminated with his expectorations. Hospital physicians and nurses careful in their ablutions are in constant attendance on sufferers from diphtheria, scarlet fever or measles for months, without contracting these diseases or being in any fear of doing so. The safest place in the world against diphtheria is the properly conducted ward of a diphtheria hospital. The surest place not to contract tuberculosis is a well managed sanatorium. What

germiphobia, what ignoble public hysteria, what discomfort would be obviated by a general knowledge of such facts. Here as elsewhere fear vanishes immediately it is comprehended.

Nor are scarlet fever and measles transmitted through the peeling from the skin in these diseases; nor is the "peeling" stage, as was formerly supposed, that when transmission is most likely to take place. And measles is infectious anyway only during the first several days of the disease. Such facts, then, have led to more rational public health measures. London for instance, maintains hospital accommodations for some ten thousand infection sufferers and treats nine-tenths of its infectious cases in its hospitals; yet it gives hardly any attention to measles, which is not even notifiable to the authorities. Why not? Because by the time the report is received and the case placed under surveillance the damage has been done. For the same reason disinfection is not now done after measles cases. The only cases of this disease the authorities consider are those occurring in schools and which are at once removed. Dr. Charles V. Chapin, the able health officer of Providence, R. I., has for years abandoned the disinfection of the homes of diphtheria, scarlet fever and measles patients, with no increase in the number of secondary patients (such as would have contracted the disease from their sick relatives and friends). Any way the number of secondary cases of scarlet fever occurring in private families directly exposed is surprisingly small—less than four per cent. of those who come directly in contact with the disease, states the superb August *Bulletin* (on which these observations are based) of the Department of Health of the City of New York.

Certainly disinfection will destroy germs or render them innocuous; but most germs cannot in any event, retain their vitality and their capacity for mischief for any length of time after leaving the patient's body: and, as a matter of fact, the best disinfectants ever invented are pure air and sunshine; a sick room thus ventilated after the termination of the case, and the bedding, carpets, rugs and so on exposed to the blessed sunshine, with plenty of soap and water for scrubbing up will, for most infections, be all the disinfection necessary. Thus, in accordance with the modern conception of the spread of infections, and following a report of Dr. Herman M. Biggs, its general Medical Officer, the Metropolitan Board of Health last year abandoned fumigation (the burning of disinfecting gases) after the diphtheria case but removed the bedding to its disinfecting station. But when the patient died or was removed to a hospital during the height of the disease, fumigation was done, it being considered possible that fresh discharges containing living germs might be present in the sick room. Measles was similarly handled except that the household goods were not removed for disinfection after death or recovery. In scarlet fever fumigation was done after recovery, death or removal; and the infected bedding was sterilized. In June last, however, the Department discontinued, by reason of the practical absence of danger from the patient's bedding, its disinfection after cases of diphtheria, scarlet fever, measles, cerebral spinal meningitis and poliomyelitis.

THE IDEAL GENERAL PRACTITIONER.

He is virile by virtue of his environment; he is self-reliant from his isolation; he is resourceful from necessity; he exalts common sense above fine theories; he deals with all conditions and preserves a breadth of vision, grasps general principles, and failing the finer technical knowledge of the specialist, is spared the distortion of his perspective. He knows his patient as a man and a friend and not as a commodity, and he it is who exemplifies best and most consistently that unselfish regard for others that glorifies medicine.—*Meara in Boston Medical and Surgical Journal.*

HEBRAIC IMMUNITY FROM INFECTION.

Professor J. A. Lindsay has observed, with regard to the ethnic aspects of disease, and to immunity from Disease Considered in Relation to Eugenics (*American Hebrew*, August 16, 1912), that certain maladies fail to appear, or appear only in slight degree, among the Jewish people; they suffer less than the peoples among whom they live from alcoholism, the "social diseases" and certain epidemics. On the other hand, they suffer more than the generality of mankind from diabetes, hemorrhoids and nervous diseases (especially blindness, color blindness, deafness, dumbness and insanity). In modern times the Hebrew seems to enjoy some degree of immunity from leprosy, which appears to have prevailed extensively in Palestine twenty centuries ago. (One must recall, however, that the leprosy of the Old Testament probably included several diseases besides true leprosy—psoriasis, vitiligo, eczema, syphilis, lupus.) Yet this observation—regarding the modern Hebrew's immunity from leprosy—is at least interesting with relation to his presumed comparative immunity from tuberculosis. Leprosy is in all probability to-day but a mild and fairly innocuous form of tuberculous infection.

The modern Hebrew is considered by many investigators to enjoy a comparative immunity to tuberculosis — comparative only, of course, for unquestionably many Jewish people have this disease. Professor Lindsay is among those who doubt that the Jew enjoys any special immunity in this regard, whatever may have been the case in ancient times. Nevertheless, he sets forth the circumstances to which such immunity, if it exists, might be attributed: Jews do not often engage in occupations involving much exposure to the weather; they have a special dislike for dust, and practise frequent house cleaning; they are very careful in their choice of meat for food; they suffer relatively little from alcoholism.

A consideration of Jewish conditions in the metropolis would have a bearing on the much mooted question as to the modern Jews' comparative immunity from tuberculosis. Of two maps of the lower portion of Manhattan Island, the first shows given districts in which the densities of the respective populations is represented. Where the shading is quite black the population is densest; then these shadings progress from very dark to no shading at all, representing populations less and less dense. The darkest shading of all is put over the region that is occupied by the Jews, to the practical exclusion of all other races. In New York City there are now nearly 1,000,000 Jews—about one-twelfth of all the Jews in the world; and the vast preponderance of the race is to be found in the region noted, probably the most densely populated in the whole world. In the second map the districts are outlined precisely as before; but the one among them all which has no shading at all is this same Jewish quarter. That is to say, the Jews are more closely crowded than is any other community; yet tuberculosis appears to be least rife among them.

This overcrowding would denote practically every factor considered causative of tuberculosis: Personal habits here are no more cleanly than anywhere else; the proper disposition of sputum does not obtain; the air in these tenements is in the last degree vitiated and unwholesome, the streets are very dusty; sweat shop work is done by these poor Jews to a pitiable degree; from early morning to late at night they bend over their machines; their lung expansion is poor and "they have no chests."

Here would appear to be evidence strongly corroborative of the views of Hebraic comparative racial immunity to tuberculosis. And the explanation would lie principally in three factors: 1. Familiarity with an infection through many generations renders a race comparatively immune to it. The negro, for example, is so inured to yellow fever that one safely makes him a nurse for a yellow fever patient; but every other adult negro dies of tuberculosis, a disease with

which they unhappily became acquainted with but a century or more ago. On the other hand the Jewish race, during the forty centuries of its existence, has known tuberculosis, and would on this account alone seem to have attained a comparative immunity to it. 2. There is the character of the food and drink consumed by the orthodox and steadfast adherents to the Jewish faith; this must surely obviate a great deal of ingestion of tuberculous infection. 3 Alcoholism is one of the most pernicious of the predispositions to tuberculosis; the Jewish people, as a race, have no drink problem and are generally temperate in their use of alcohol.

AILUROPHOBIA.

BURDICK's absorbing article on cats, in our Leisure Hour Columns of this issue, recalls an investigation on The Fear of Cats, which Dr. S. Weir Mitchell made nearly a decade ago, and in which he enumerated classes of people who have this fear, which he terms ailurophobia. There are those who have cat asthma; those who have fear on seeing cats, without sequent, excessive or emotional manifestations; those who manifest such emotions when a cat is near, though unseen by them; those who can smell a cat without seeing it. Besides these, cases occur "in which the consciousness of a cat is present through its smell once existed, but does not now, and yet the ability to detect unseen cats remains." The great physician and litterateur, now passed away, considered that cat emanations may affect the nervous system through the nasal membrane, although unrecognized as odors. He made an extensive study of this strange manifestation and collected a great many data. His researches brought to him indisputable evidence concerning a large number of people in whom the presence of a cat gives rise to a variety of symptoms—oppression of breathing, fear, terror, disgust, chilly sensations, horripilation, weakness, locked jaw, fixed open jaw, (in one case), a rigidity of arms, pallor, nausea, vomiting (rarely), pronounced hysterical convulsions, "cat-mares" — even temporary blindness. These symptoms pass away with the removal of the cat but may leave the sufferer nervously disturbed for the day. In at least one-fourth of Dr. Mitchell's cases terror in grave form was shown to be a family peculiarity. Five in a family of seven had it. In another family the maternal grandfather, two great-aunts, an uncle and a sister were all thus troubled. Sex appears to have no marked influence, but extreme symptoms are more frequent in women.

"In my own family," wrote Dr. Mitchell, in *American Medicine,* "an uncle was the subject. My father, the late Professor John K. Mitchell, having placed a small cat in a closet, with a saucer of cream, asked Mr. H. to come into the room and look at some old books in which he would be interested. He sat down, but in a few minutes grew pale, shivered, and said: 'There is a cat in the room." Dr. M. said: 'Look about you. There is no cat in the room. Do you hear one outside?' He said: 'No, but there is a cat.' He became faint and complaining of nausea, went out and promptly recovered."

Dr. Mitchell was not able to explain the ultimate cause of such ailurophobia.

A man needs to see the stars every night that the sky is clear. Turning down his own small lamp, he should step out into the night to see the pole star where he burns or "the Pleiads rising through the mellow shade."—*Dallas Lore Sharp, The Atlantic Monthly,* October, 1910.

It may seem paradoxical; but it is true that sentimentalism hardens the heart.

One of the most discouraging things in the world is that a majority of the people who make nuisances of themselves mean well.—*London Evening Standard.*

WOMAN MOTORISTS.

Apropos Dr. Musgrove's fine article on *Automobiles and Nerves* in this issue of The Gazette we give here observations of the *Journal of the American Medical Association.*

Women motorists are increasing in numbers; and this fact is said to be stimulating manufacturers to build cars with especial reference to feminine abilities and limitations. "Cranking up" has heretofore certainly been a man's work; and the chauffeur's fracture, occasioned by this maneuver, has not been rare. When the self-starter has been perfected, however, as it now promises to be, and becomes simple, inexpensive and reliable, about the last mechanical impediment to a woman's handling her own car will be removed. Even now the clutch, which used to require a man's muscular power to disengage, generally needs only the strength which the average woman can easily exert, and new devices make it possible for women to adjust tires. This suggests a brief discussion of the limitations of motoring for women and the not infrequent sequelae, some of which apply to men as well.

Driving a motor car from April to November should be a healthful recreation, both physical and mental, for many women, provided the exercise be within reasonable limits, speeding being eschewed and the car a runabout or light roadster—one, at any rate, not too heavy for a woman to handle. The "weaker sex" are naturally quick of eye and deft of wrist, two qualifications, aside from sufficient strength, which are needed. It may be said, however, that women are in general more excitable and of less steady judgment than men, shortcomings which may prove disastrous in emergencies, or which might render it advisable to confine motoring efforts to areas outside the crowded portion of the larger cities. The rougher contact of men with the every-day things of life, their greater participation from boyhood up in sports and athletics generally better fit them to meet the exigencies of motoring. General athletic training for women and indulgence in sports such as swimming, rowing, tennis or the work of the gymnasium, which develop command and coordination of muscle and brain, would to an extent supply this lack in women, and no doubt many women with such training may become efficient motorists. It may be possible that it should be limited to women with such training. To them it offers much pleasure and benefit, perhaps, and may be indulged in when the other forms of exercise or sport are unavailable or unsuitable. Rational motoring affords opportunity for plenty of fresh air, with improved appetite and increased zest of life, and the ever-changing scenes may smoothe and satisfy the emotions, and hitherto unfamiliar aspects of civilization may interest and divert from introspection.

There is, however, quite a formidable array of troubles, nervous and otherwise, which have been charged against motoring, and which point to the fact that the sport at best is a somewhat strenuous one for women. The ailments for which the motor car may be held responsible are due almost entirely, however, to speeding and to the fear of accidents which might thus be engendered.

The "auto-eye" is a spasm of the ciliary muscles (which govern accommodations for distances); to this those who have errors of refraction are specially prone; speeding over an unknown country, through devious roads, the sight being constantly and rapidly attracted by objects now near and now in the distance, makes an abnormal strain on the visual mechanism.

Wind and dust, coupled with high speed, induce any degree of conjunctival inflammation, from a hyperemia to a contagious lesion; the wearing of goggles largely obviates this. Auto-leg is a cramp due to sitting in one position for hours, while the veins and muscles are under strain from consecutive shocks and joltings over bad roads.

The sequelae of nerve strain and nerve exhaustion, such as hysteria and neurasthenia, are not rare, especially among young women who motor extensively. Such attacks come on relaxation after strain in a rapid run over many miles, but they are not ordinarily serious in healthy women; and yet in those not up to par as to their nervous systems, they have grave sequelae. The excitement of motoring may appeal to such women. The ever-increasing stimulation inherent in speeding may sooner or later end in prostration. For such cases entire rest and complete abandonment of motoring are absolutely essential. All women absorbed in motoring should from time to time consult their physicians regarding conditions which they are unable to account for.

Dr. G. Bryson Delavan considers that while pulmonary diseases should in theory be much increased by motoring, practically such is not the case; indeed, the car properly used is a valuable therapeutic agent. Nevertheless, acute catarrhs and advanced tuberculosis with abnormal temperature certainly contra-indicate motoring.

DOCTOR'S DISEASES.

A LITTLE newspaper item, stuck off in one corner of the page, recently told how a doctor had died of apoplexy on the steps of an elevated Railroad station. Of course, any one might die of apoplexy; and yet this cause of death is not as rare among doctors as in many other occupations.

It's a strange thing to say about doctors—whose business it is to keep other people well that as a class they are more subject to illness than any other, and their expectation of long life is less than in most other callings. This profession has an average of 57 years at death—much too premature in these days.

There are several reasons for this: There is the anxiety and the responsibilities that weigh heavily upon doctors who are generally men of conscience and sympathy. Then there is the amount and the trying nature of most of the doctors' work—the irregular meals and the broken rest, exposure to the elements and to infection. And then there is the scanty pay which most doctors get for their services, not to speak of the difficulty of collecting a great deal of money they have earned; and when to this is added the fact that about half a doctor's work nowadays is done in hospitals and dispensaries, for charity, who can wonder at the overwhelming strain to which these humane men are put?

Broken sleep is one of the most certain causes of the shortened lives of doctors. What this means can be judged by hearing anybody not a doctor talk about how once or twice in his lifetime he had had his night's rest broken. Possibly he has sat up with the coffin of a dead friend. Maybe he has given a couple of hours from his rest to a sick friend. Or perhaps his wife has needed a little midnight nursing. Throughout the rest of his days, in season and out of season, you will find him buttonholing everybody he can get to listen to him, while he explains his noble self-denial and his beautiful Christian act. By and by, when he is seen approaching, his friends (fearing to be told about it all over again) will dodge down a side street, as if trying to avoid a creditor.

Yet such night-work is the common lot of doctors, whilst the day's work must go on just the same. Being aroused in the first hour, when sleep is profoundest, is always a shock and frequently a grave one to the heart and the nervous system. That is why angina pectoris, or neuralgia of the heart, is called the doctor's disease.

WHERE WERE THE MOTHERS?

New York City decided recently to have a "baby week." Therefore Mayor Mitchel at once called into conference the Chamber of Commerce, the Advertising Men's League, and the Merchants' Association.

"Father, what is the Prussian Diet?" "Rye bread and beer. Be quiet now, will you?"—*Buffalo Express.*

"What do I owe you for tracing my family pedigree?"

"Five hundred dollars hush money."

ORIGINAL ARTICLES.

DISPENSARY AND OTHER EVILS.

By Arthur C. Jacobson, M.D.

The abuse of charity which has taken place in connection with the operation of our dispensaries has been not inconsiderable. From eight to twenty per cent. of the people treated in dispensaries are able to pay, according to observers working in different localities. We have a good law covering the dispensaries in New York State, and the State Board of Charities has administered this law in excellent fashion. There are some defects in the law, but these will probably be remedied. Thus it ought to be insisted upon that the registrars be physicians. Provision ought also to be made for the payment of the attending physicians, not from funds representing the fees paid by patients for medicine, etc., but from governmental sources, since otherwise there would be a temptation to run up the number of applicants unduly, something which ought to be discouraged. Free medical service is based upon immoral principles, and can be justified only by specious arguments. The elimination of undeserving applicants can be brought about in several ways. No one should be treated except upon the presentation of a letter setting forth the applicant's inability to pay from his physician, or clergyman, or some one actually acquainted with the circumstances of the patient. The policeman on the beat in which the applicant's home is situated could certify him. Then there should be a clearing house for all patients, like the central tuberculosis clinic of the Department of Health, which registers and investigates all the people treated at the various clinics. Finally, until the universal employment of social service workers in this field, no wholly satisfactory results can be expected. Then the dispensary will become what it ought to be, a great force in the field of prophylaxis. Under these ideal conditions the dispensary would bid fair to exceed in importance the hospital itself. One of its chief aims would then be the prevention of hospitalism. Social service is now largely confined to the care of the convalescent. In the future it will deal upon a large scale with the hospital "candidate." This development will necessarily take place in the domain of the dispensary. The cost will be borne in some way not now clearly apparent, for such a development, while enormous in scope, is inevitable. The dispensary itself will not pay the cost, for it can never be a paying institution, and ought not to be if it could. Indeed, the dispensary of the future, a properly regulated institution, will deal only with the very poor.

The dispensary will yet have to serve a better educational purpose. That is to say it will have to provide opportunities for clinical study to the entire profession, as, indeed, will the hospital of the future. We are already seeing the beginnings of what is to be.

We have said that free medical service is immoral. The doctor is not immune from the operation of economic laws. There is a business side to the practice of medicine. No more than any other man ought the doctor to give something for nothing. What is called altruism in the case of the doctor's conduct in respect to the abuse of medical charity is not altruism at all. Why boast of not having taken money from people who did not have any? What we have really failed to do in the past has been to demand and obtain remuneration from the State for our care of the State's charges. Nobody but the medical profession takes care of the sick poor for nothing. Everybody but the doctor is paid by the State. Is it not so? Now that our folly is so evident, and now that we see the relation of this idiotic financial policy to the dwindling of the respect in which the medical profession is held to-day

we cannot strike or in any other radical way help ourselves out of a deserved plight. Circumstances determine our destiny; we do not sufficiently determine what those circumstances shall be. If socialism comes it will not be as a remedy, but as further punishment for our sins, enslaving us the more.

There is danger confronting the profession to-day which is not clearly foreseen by the rank and file. It is this, that the sociological side of medicine is being rapidly developed by workers who are not members of the profession. It is absolutely true that the majority of medical men do not comprehend the principles and aims of social service. This is one of the chief complaints of the workers in this field. Very, very slowly the hospital and dispensary men are seeing the light—they who should have been in the forefront of this great social movement. Just as we failed to do economic justice to ourselves and our families in the old days when the abuse of charity was beginning, we are failing to-day to see that one of the greatest movements in the history of medicine is being engineered by lay workers. No wonder the respect that is paid to the profession to-day is perfunctory. A perfect analogy is presented by the clergy, clinging to their outworn dogmas and creeds while the world of men grows more religious and concerned with the fundamentals of the spiritual life every day. The people are actually passing by the church, which cannot follow them. So would it appear to be in medicine. We are absorbed in the problems of artificial immunity and insist that the physician of the future will be an immunizator, while the people are keen about improved social conditions that will create and sustain the natural immunity that should rightfully be theirs. What would we have to fear from tuberculosis if the community health were what it ought to be? We sit in the bleachers and watch an occasional Noguchi perform his wizardry. Superb automatons, we perform the classical operations and administer stock vaccines. But we seem to lack organic professional forethought and judgment. Like helpless children we are caught in the great currents that sweep about us, and when we try to reason out things we grow confused, and give them up and talk about the glorious altruism and progress of the medical profession. And our ears are perfectly attuned to the dulcet notes of the flatterers who connive at our debauchment. We are as adept at anesthetizing ourselves as others. No other class of men consumes so much spiritual absinthe for the abatement of bad dreams. We have dodged our obligations to ourselves so long and so consistently that the economic reckoning is at last upon us and we can dodge no longer. Wherefore do we witness the organization of societies for the study, if you please, of medical economics and sociology. If, after our ages of experience, it is necessary to begin now the study of these things, we shall never learn anything, for we ought to know enough at this late day to at least insure elementary economic justice and survival. Evidently we don't know enough and are actually attending sociological kindergartens and listening to opportunists and tiresome mountebanks who are capitalizing our ignorance and imbecility. In the meantime the cleaning up of our prisons, basically a sanitary and hygienic proposition, is being effected by lay reformers. If the social vision of the profession had been in times past what it ought to have been, the reform of asylums and similar matters would have been credited to it because it would have inaugurated and conducted such reform. We are surrounded by health propagandists to-day and freak cults of all sorts because we have not ourselves brought about those things after which these well meaning people are striving. Now we talk about educating the public in matters of health, just as though the medical point of view could, by some necromancy, be transferred to the people, which is a great fallacy, since such a thing is the product only of long professional training. It is in the ranks of the "medically educated" public that we find the anti-vivisectionists and other enemies of medicine. We have failed to dominate absolutely in medical matters as we should have because we have lacked social vision and initiative, not because we have lacked knowledge.

It is too late now to set these matters right, and we must sit by and take the bitter medicine that is in store for us, economically and professionally. Instead of controlling circumstances we are fated to be controlled by them. This is not pessimism but a statement of the truth. "The man who looks out of the window on a rainy day, when the landscape is obscured by mists and clouds, and affirms that all nature is smiling and the sun shining brightly is not an optimist; he is a liar."

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THE BINET-SIMON TESTS OF INTELLIGENCE.

By B. F. Kuhlmann, Director of Research, Minnesota School for Feeble-Minded and Colony for Epileptics.

To devise tests by means of which the intelligence of any individual could be accurately determined has been the effort of psychologists for many years. The Binet-Simon tests, though having received quite suddenly the attention of the whole educational public, were the results of a score of years of investigation. Their publication as a more or less complete system of tests for all ages of children, was undoubtedly crystallized by the authors' need of such a system in their practical work of eliminating mentally subnormal children from the regular classes in schools of Paris. As such they appeared first in 1905, but were much revised in 1908. The 1908 series at once gained the attention of psychologists throughout the world, and in the following two years the tests were tried out on thousands of children in Europe, England, and America. The immediate result was a wide advertisement as to their practical usefulness, and many criticisms and suggestions for improvements. This led the authors to publish a further revision in 1911. This much alone of their history will suggest that the Binet-Simon tests are not a finished or final product, but only a prominent stage in the development of a method and means of objectively and accurately measuring human intelligence. It is a stage, however, that is prominent not alone because it represents a sudden progress to a point where intelligence tests have become highly practical in their application, but also because of the impetus their practical usefulness has given to renewed and more extensive investigation of the problem of mental testing. Scores of psychologists are now at work studying the Binet-Simon tests, still further testing their value, or attempting improvements and extensions, because their success has demonstrated possibilities in a task that was to many beginning to seem hopeless.

The Binet-Simon tests are a series of simple things that the child is asked to perform. These things, or tests, are arranged in a series of increasing difficulty as found by the abilities of normal children of different ages to perform them. They are, further, grouped into groups of five for each age. Thus, there are five tests for three-year-old children, five for four-year-old children, and so on, to the age of twelve and fifteen. In practice a child of any age, say of six, is given these tests, beginning with a lower age-group, up to a point where he no longer succeeds in passing any. The average child of six will pass all the tests in age-group four, and five, fail in one or two in age-group six, and in all five tests in age-group eight and beyond. With such a scoring the intelligence is graded in terms of "mental age." The child is given the mental age of the age-group just below the one in which he begins to fail in one or more tests, plus one year for every five tests in which he passes in all following age-groups. Thus, for all average normal children the age and mental age should be the same. A feeble-minded child of ten may have a mental age of only five, which then means that he has a mental development equivalent to that of the average normal child five years old.

The authors originally intended the tests for use in examining school children from about three to twelve years of age. The 1908 scale of tests stops with tests for thirteen-year-old children, it being assumed that, so far as intelligence in itself is concerned, mental development is completed by about that age. But it can be readily seen that their use need not be limited to school children, and it has not been thus limited. They have been made

use of in as many as six different fields. These are: (1) public schools; (2) schools for feeble-minded; (3) reformatories; (4) juvenile courts; (5) recruiting stations for army and navy; (6) immigration offices. Their applicability in these different fields is not limited by the age of the persons to be examined, but by the grade of their intelligence. The more nearly the intelligence approaches normal maturity the more complex the mind becomes, and the more individual variation there is with reference to special aptitudes and weaknesses. Consequently it becomes more difficult to accurately measure the higher mental ages than it does the lower. Furthermore, since the tests stop with the age of thirteen, a normal twelve or thirteen-year-old child, or an older person with an intelligence corresponding to this age, will not have an opportunity to pass extra tests beyond these age-groups in order to attain the mental age of twelve or thirteen. This affects even eleven-year-old children in some degree. For these two reasons the tests cannot and are now recognized not to measure as accurately for mental ages beyond ten as they do for lower mental ages. Many examiners have made grave mistakes with the tests and are still making them because they do not realize this fact. These have occurred mainly with reformatory and juvenile court children, where boys and girls from ten to eighteen years with mental ages frequently from one to three years below average normal have to be dealt with. In the hands of a properly qualified examiner this defect does not eliminate the usefulness of the tests in these fields, because they are still applicable for the accurate determination of the lower grades of intelligence whose exact nature usually escapes detection otherwise. They have at present only a limited use in detecting mental defects among immigrants because they have not yet been adapted and standardized for use in the different languages. To make this adaptation and to standardize them for the different languages is a large task, but it should not offer any insurmountable difficulties. They have at present their largest sphere of usefulness in the public schools, and in the schools for the feeble-minded.

As in the case of many other efforts to apply the results of science in practical life, the use of the Binet-Simon tests has led to popular criticisms, which although erroneous because the tests are misunderstood, do much harm in preventing their more extensive use in fields in which they could be of the utmost usefulness. Some of these are recurrent and persistently made, and were in fact first made by psychologists themselves. The more prominent among these are (1) that the individual tests too often give wrong results; (2) that the influence of special training or lack of it too often determines whether a child will pass a test and not his real intelligence; (3) that the mental ages obtained with the tests often contradict what is known of a child from general observation and especially from his school work. These criticisms have been answered. The individual test does often give a wrong result in the sense that a normal six-year-old child, for example, will often fail to pass a test in age-group six, and even in age-group five. Likewise, he will often pass a test in age-group seven, and even in age-group eight. But only about sixty-five per cent. of normal six-year-old children should pass any one test in age-group six, and likewise for the other ages and age-groups. If they do this the mental ages obtained will be correct. This follows from the fact that any child is not tested alone by the tests in his age-group, but also by the tests of preceding and following age-groups. The rule for counting up the mental age from the scorings on the individual tests is an important and essential part of the system, and corrects for a considerable range of error that may be inherent in any individual test. The first criticism is, therefore, based on a misunderstanding as to what is required of the individual test. The second criticism is in a small measure valid. Special training or lack of it will sometimes cause a child to pass or fail in some individual test independently of his grade of intelligence. But this does not occur in the case of any one child for so many tests as to seriously affect the general result, the mental age. There are two general facts that prevent this. First, the tasks chosen for tests are of such a nature that every child has had abundant opportunity to learn to perform them if he has the necessary intelligence. They are the things that every child meets again and again. If he fails to learn them it is because of a lack of intelligence. Secondly, within certain limits, no child can be taught by special training to do a thing if he has not yet developed the intelligence that is involved in the performance of it. This criticism entirely overestimates the impor-

tance of the amount of truth there is in it. As to the third criticism, it is also true that the mental age obtained with the tests is often at variance with the quality of the child's school work, and more frequently with previous opinions as to the child's intelligence. But this mere fact proves nothing. It is because we have always recognized that school work or opinion based on general observation are not adequate criteria of intelligence that we have felt the need of standardized mental tests that would be more accurate. We cannot now apply our old and recognized poor standard of accuracy to judge the accuracy of the tests.

The authors in devising the tests attempted to establish the degree of their accuracy in an entirely empirical way. This was by examining a large number of normal children with them and determining in what tryout measure the ages and mental ages always agreed. This method has been followed by others, and thousands of children have now been examined with these tests merely to further try out their accuracy. These and other results have led to the general conclusion now commonly accepted by students of the tests that the Binet-Simon system gives far more accurate knowledge of the intelligence of children than can be obtained in any other way. It has the additional advantage in the fact that this knowledge can be obtained in the case of any child in a relatively very short time, in forty-five minutes or so, in place of months or years of general observation. This conclusion, however, although sufficient to assure us of the practical usefulness of the tests, is not satisfactorily definite from a scientific standpoint. We want to know just how accurate it is, and at what points and in what ways it fails. The question at once divides itself into two quite different matters. The first question is how closely the average mental age as obtained by the tests agrees with the average age of a large number of children. What, for instance, is the average mental age of a hundred normal children all exactly six years old? The second question concerns the range and frequency of a difference between the age and mental age of such a group of normal children. How often will it occur in the case of a hundred normal six-year-old children that the mental age will be less than six or greater than six, and what is the maximum difference? The first question is relatively easily answered. Several investigators have obtained conclusive results showing that the tests measure on the whole too high by a fraction of a year for the lower ages, and too low by a fraction of a year for the higher ages. This amount of error, however, is insignificant as compared with the degree of accuracy we could possibly attain by any other available method. But the same results that show us this do not tell us much about the second question, which is the more important of the two. What we want to know first of all in the case of each individual child is the chance of error in the results of this individual testing. If we know that the results will be absolutely correct in ninety-five per cent. of the children tested it gives us a quite different assurance in the individual case from what is true when we know that the results will be absolutely correct in only seventy-five per cent. of the children. This knowledge gives us a measure of the frequency of error. Again, we might be quite satisfied with tests that gave absolutely correct results in only seventy-five per cent. of the cases, if we knew that the errors made never exceeded a certain small amount, say half a year. This knowledge would give us a measure of the range of error made by the tests. We have as yet no very definite knowledge as to the frequency and range of error made by the Binet-Simon tests, because we have no adequate means of knowing the exact grades of intelligence of normal children we may choose for examination for the sake of testing the tests. The real, correct mental ages of what we call normal children undoubtedly vary over a certain limited range for each age. When we get a difference between age and mental age in the case of any child we never know how much the difference is due to the intelligence of the child, and how much is due to errors made by the tests. To test the tests implies that we have already an accurate method of determining the intelligence of children, which we have not. There seems to be no direct method of solving this problem. But there are indirect ways. Various improvements for the tests have already been suggested, which we know will decrease the frequency and range of error, and these will undoubtedly multiply, and as these improvements are carried out evidence of the degree of accuracy of the tests in this respect will accumulate.

One of the most striking and useful features of the Binet-Simon tests is that it grades intelligence in terms of mental ages

instead of in terms of some arbitrary scale that would be intelligent only to experts. The mental age of a child gives the layman a fairly definite idea as to the child's mental abilities, for he has a fairly definite idea of what a normal child of any given age can do. Yet it is in this connection that a serious misconception exists almost universally outside of a few psychologists. The mental age alone indicates the present abilities of the child, his present stage of mental development, but it does not by itself indicate the inherent capacities for development. Ten children each with a mental age of six, but varying in actual ages from six to fifteen would have widely different inherent capacities for development. The youngest would be an average normal child, while the oldest would be a middle-grade feeble-minded. The mental age of the youngest would increase a year every year; the mental age of the oldest would remain practically or entirely the same. Likewise, the difference between the age and mental age does not alone indicate the inherent capacity for development. A twelve-year-old child with a mental age of eleven, is much more nearly average normal than a six-year-old child with mental age of five. This seems to be the resultant of two factors. First, the normal rate of mental development decreases with age. A year's mental growth at twelve is much less than it is at six. Secondly, a child who is developing at a rate slower than the average normal rate will fall behind a little every year, the amount accumulating with age, although his inherent capacities for development have remained the same all the time. It has been only within the last year that it has been suggested that the fraction obtained by dividing the age by the mental age gives a much truer indication of the child's capacities than does the mental age or difference between age and mental age. Thus, the following relations between age and mental age all represent the same capacity, the same true grade of intelligence, because they give the same fractions.

Age	3 ..	6 ..	9 ..	12
Mental age	2 ..	4 ..	6 ..	8

It remains to be seen whether this measure of intelligence can be regarded as always accurate enough to be satisfactory from both the practical and the scientific standpoint. But it is an important advance to clearly understand that the tests give two, not one measurement. The mental age alone gives us a measure of the child's present abilities. It gives us his present level of intelligence, but does not indicate whether he is average normal, or how much above or below average. The mental age divided by the age gives us a measure of the amount his intelligence varies from the average normal. In the case of the mentally defective child it gives us the degree of his deficiency.

The Binet-Simon tests are now being used throughout this country and Europe, chiefly in the public schools. In some instances they have been adopted as a recognized standard method of measuring intelligence. In others they are still being tried out in an experimental way to determine the degree of their practical usefulness. It is hardly a prediction, but merely a plain inference, to say that mental testing, either with the Binet-Simon or similar system, as a regular procedure wherever the information as to grade of intelligence is desired, is an assured fact for the near future. Misunderstandings, and failure to employ qualified examiners in the use of the tests, which is at present the rule, may retard progress towards this end, but can hardly eliminate mental testing as a passing illusion of a long-sought-for object.

ON VISITING THE SICK.

Do not ask them how they feel. It is an insult to them, for if they felt well they would not be sick, and it is also a reflection on your intelligence, for if you would look around a little you would be able to see how they feel. Be of some service and cheer (if possible) and get out. There is a time later when folks need company, but sickness is essentially a non-social occupation. It is a merit to visit the sick when you help them, but to beat them over their enfeebled heads with your robust personality is a peculiarly careless crime.—*Collier's.*

AUTOMOBILES AND NERVES.

By Charles D. Musgrove, M. D., Penarth, South Wales.[1]

When autocars took the place of horse-flesh as a mode of motion and the world began to move more rapidly in consequence, we all rejoiced to think that we were to have more spare time in which to enjoy all the advantages of recreation. After ten years of this new method of travelling, some of us pause to consider as to whether we are any better off than before in the matter of health and enjoyment, as whether in fact we are not rather the worse. We have certainly had more time to spare, but are inclined to think that we are somewhat like the man who fell over the cliff, when he meant to climb down it; he reached the bottom more quickly but was not good for much when he got there.

We too have discovered that even though our day's work is shortened, by the time we find ourselves with nothing to do we are too tired to do it.

Autocars have enabled many people to get through more work in a given time, there is no denying. But they have robbed mankind of one element which is a prime necessity as regards health. That vital requirement is rest, both during work and after it.

Rest is not simply a question of inaction or oblivion, but of change also. In order to save us from breaking down, nature has interposed many inevitable interruptions in the course of our lives, in the shape of hunger and the desire for sleep. Otherwise we should all run ourselves to a standstill, in the same way that the life of an automobile would be a short one, if it were used incessantly without any time for overhauling or repairs. The constantly recurring interludes in the form of mealtimes and sleep are the breathing spaces which are the salvation of our nervous systems. So far from being a waste of time, these breaks are as essential as food itself. It is they which re-vivify us, re-create us in fact. Recreation is not merely a matter of games or other forms of pleasure; the essence of it is change.

It is just here that automobiles have done the damage, by eliminating many of the changes which formerly took place in daily life and work. The man who once went to his office by train or electric car, or better still on foot, if distance permitted of it, now steps into his car and is whirled straight from his own door to his place of business. The result is that he flies past the interesting little details of life, which previously changed the current of his thoughts. His mind is now occupied with thinking of his work, if he is not agitated by the dread of an accident, which is worse still. Previously his brain was refreshed by a score of diverting incidents by the way, friendly discussions with his travelling companions and all the by-play which goes on in the stream of life. As a man said to his partner, when chaffed by him for walking to the office instead of using his car, "It's all right. You got here sooner than I did, but you missed a magnificent dog-fight."

Even if such luxuries do not always come our way, there are other diversions to be obtained en route by the man who travels in company with others. Where once a man used to enjoy a chat with his acquaintances twice a day, on his way to and from business, he scarcely sees any of them now, save the friends with whom he is on visiting terms. And the friends of our own choosing, welcome as they may be, are too often those who think very much like ourselves. They do not always refresh us in the same way as chance acquaintances, with their different outlooks and points of view.

Work itself has become more concentrated and harassing nowadays. If a man has to leave his office in the course of the day to interview someone in another part of

[1] Author of Nervous Breakdowns and How to Avoid Them.

the town, he steps into a taxi and is whisked there and back, instead of going by the electric car, or being quietly bowled along in a hansom. This may save time in the immediate present, but what of the future? Too often the nervous system is called upon to pay. The man has been deprived of a breathing space, which would have given his mind a much-needed rest.

There is even more than that in it. The worst feature of motoring is the sense of useless, unnecessary hurry which it inculcates. As people sit in a car, all they want is to get to their destination, regardless as to whether there is any need for haste or not. When they step out of it, this feeling of hurry is still with them, so that they rush at their work with needless speed and worry. No matter how smoothly an autocar may run, it seems to have a disturbing influence on the nervous system. Apart from the habit of looking out for obstacles and other risks, the fact of objects flying past the vision bewilders the brain. When travelling by tramcar or train the objects fly past also, but the effect is not the same, for the passenger can fix his gaze on the interior of the carriage and this is relatively stationary, so far as he is concerned.

This sense of hurry invades the hours of leisure also. Compare a man who arrives home in his autocar with one who has travelled in some other way. The former is often restless, unable to sit down quietly and take the repose he is in need of. Golfers too have told me that if they motor to the course, it takes them some time before they can settle to their game. For the first few holes they tend to press and hurry, not only when playing the strokes but between them also, rushing after the ball as though they were afraid it would run away from them.

Now when a man finds both his hours of work and those of leisure disturbed by this feeling of unrest, he is on the road that leads to a breakdown. He is overworking a nervous system which is in the worst possible condition to withstand any strain.

What is the remedy? Automobiles have come to stay, but that does not mean that we are to make ourselves slaves to them. We are bound to use them on occasion, but we should all be the better for travelling in some other fashion when circumstances permit.

One morning a man found that his car was in need of repair. So he had to go by train instead. On the way he had a most interesting chat with an old acquaintance whom he had not seen for months. Previously they had been wont to travel together morning and evening. As they parted at the terminus, the other remarked, "This has been a treat. Let us hope that your car will break down every day in future."

That same afternoon the man had arranged to go for a picnic with his wife and family to a country spot some fifteen miles away. As his car was not available they had to go by rail. On their return they had to wait for half an hour or so at the wayside station for the train. It was a lovely evening and the landscape lay bathed in the mellow light of a rich sunset. Peace lay over all the land, and as the man strolled about with his wife and children, feasting his eyes on the beauties of nature, his mind was imbued with a sense of repose it had not known for months. Like his acquaintance of the morning, he began to think that it would be a good thing if the car was hors de combat every day.

If autocars only broke down more frequently, they might save many nervous systems from undergoing the same experience.

A SURGEON'S PRAYER.

Oh Lord, now that this day is over, grant me the gift of sleep. Watch over my ligatures and may the peritoneum do its duty. Let me not be envious of the success of the men who work harder than I do. Endow me with humility so that I may change my methods for better ones. May my mistakes give me more concern than my successes. And oh, Lord, keep my conscience awake even when my intellect nods. Lead me not into the temptation of fee-splitting. Permit me to rise early, oh Lord, making one less mistake each day. Deliver me from the too-long-delayed operation, but grant me strength to do my duty no matter what my mortality statistics may be. For all these and the chief blessing of work, I humbly ask, Amen.—*L. M. K., New York.*

A FEW FACTS ABOUT SUGAR.

Dr. Axel Emil Gibson, Los Angeles, Cal.

Without possessing the fatal fascination of a narcotic, sugar attracts the human race more than does any other element of the dietary. And though it may appear strange yet statistics all agree, that there exists a positive relation between a people's demand for sugar and the standard of its culture.

Hence, it will not be surprising to find the Anglo-Saxon at the front of the world's armies of sugar eaters. The statistics of the United States Government, collected in the year of 1910, state that the average citizen of this country and of Great Britain consumes yearly more than half his own weight, or 80 lbs. per capita. Next in the line of sugar-loving culture people come Denmark, Sweden and Norway, with their respective 70 and 65 lb. per each average man, woman and child. Then follow Germany, France and Holland with their tribute to the Monarch of the Palate at the rate of some 50 lb. each;—while at the end of the list we find Italy, Greece and Turkey with a sugar consumption of somewhat less than 23 lbs. per head. Last year's consumption of sugar in the United States alone exceeded 7,000 millions of pounds!

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HAS THE POPULARITY OF SUGAR A SCIENTIFIC BASIS?

This popularity of sugar, especially among nations where the tide of culture touches its high-water mark, has its cause and explanation in the readiness by which it gives off a maximum of energy with a minimum of bulk. The tension of modern life with its prodigious expenditure of muscular and nervous energy demands a quick combustible to facilitate rapid metabolic exchanges. Such a combustible, or ever-ready generator of muscular and nervous energy, is found in sugar. Suspended in its bosom is held storage-batteries of incalculable powers, ready to be discharged in response to physiological needs and necessities. But the relation between the demand and the supply, in order to produce nutritionally safe results, must be metabolically balanced, and in vital accord with physiological and biological principles.

Through the culinary excesses in modern living, we have ruptured the chain of vital reciprocity by which Mother Nature relates herself to the entities of universal evolution. The ingenuity of the human intellect, stimulated by a selfish desire to gratify an undue and unnatural craving for extracted and concentrated relishes, has devised expediences by which nature can be "held up" so to speak and coerced to yield gustatory sensations in excess of the powers of digestion and assimilation. One of the strongest, and at the same time, most serious temptations in the life of an individual, lies in his natural, but over-indulged and hence over grown desire for "sweets," not only on the physical plane but, as a moral attitude—on all planes.

This craving for sweets, experienced more or less by every creature of evolution, has a deep meaning in the unfoldment and maintenance of life and growth. The function of sugar in evolution, unique and fundamental, is to charge the cells of every entity with a vital force of structural rejuvenescence. Introduced into the system in its natural combinations of fruit and vegetable, it starts chemical reactions in the responsive glandular functions, from which arise those unorganized, vital enzymes, which are the basic elements in all successful digestion and nutrition.

A physiological combustible of highest order, sugar, when entering in excess the nutritional and digestive processes of the system, releases alcohol and carbonic acid gas to the verge of cellular intoxication. As the effect on the system to some extent is similar to that experienced through the indulgence of alcoholic beverages, it is readily seen why there should be felt a general craving for sugar in our strenuous, highly intellectualized, nervously overwrought world of to-day. There is a constitutional need for stimulation,—for the nervous bracer,—resulting in the quick ganglionic shock from the cerebral spinal dynamo, lashing a jaded nervous system into temporary sensuous response.

There is a vast difference however between effects due to excess, and those arising from a balanced dietetic enjoyment. The

eternal fitness of things is pivoted on constitutional adaptation and self-conscious restraint. Moderately consumed as in fruits, honey and unfermented juices, sugar in its effect is a food; while in excess, as extract or distillate,—in the form of candy, jelly, syrup, etc.—it becomes a nerve-lashing intoxicant.

It is thus readily seen why the creatures of evolution should worship at the shrine of this powerful, ever-present, nutritional stimulant. The engines of life—the innumerable cells of the organism—are kept in action through the combustion of the sugar-molecule. The energy liberated in the organic combustions of this persuasive element is instrumental in raising the whole organic world into levels of progressive unfoldment of power and substance. It constitutes the Atlas of the biologic cosmos, maintaining the nutritional and physiological balance of organized existence.

The fact that no natural sugar occurs without being atomically balanced by carbon, leads us to the conclusion that its composition (the accepted formula of which is $C_6H_{12}O_6$) is an atomic or ionic charge of H.O., held in chemical sequence by the carbon envelope. Brought in touch with organizations that demand sugar for their growth and sustenance, the affinity evolved through the interaction of the different elements, may rise to an intensity, overcoming the controlling power held by carbon over its compound. This transition of the sugar molecule, from its carbonic envelope to the nutritional cell of an organism, through the process of affinity, constitutes the basic principle and governing condition in the entire chemistry of nutrition. In other words, chemical affinity, in its action on the digestive and assimilative processes brings into play the principle of supply and demand in the field of physiological economy.

The physiological value of sugar depends upon the character of its origin—whether naturally or artificially obtained. With natural sugars we mean the natural sweets, constitutionally present in fruits and vegetables before they have become subject to the processes of extraction and concentration, demanded by the jaded sensibility of an over stimulated and hypertrophied appetite.

At the head of the natural sugars stands Grape-sugar or Dextrine, introduced by its carbon envelope in the form of a saturation-compound, forming a complete self-balancing molecule under the chemical formula $C_6H_{12}O_6$. By this is indicated that Dextrose stands for a complete, integral, permanently self-sustained compound, in which carbon with its four valencies or powers of affinity, redoubled or re-enforced six times, is adequate to hold in a firm grip the single unit-power of the Hydrogen molecule, doubled 12 times, and the two-armed power of the oxygen, doubled 6 times. Or in other words the valency or affinity of carbon amounts in power to the combined valencies of Hydrogen and Oxygen—viz:

Oxygen	$2 \times 6 = 12$
Hydrogen	$1 \times 12 = 12 - 24$
Carbon	$4 \times 6 = 24 - 24$

The formula governing this compound comprises the whole group of natural sugars, such as Grape-sugar, Fruit-sugar and other Monosacharides. Complete, and chemically satisfied,—with every atom of the compound structurally engaged, the formula $C_6H_{12}O_6$, introduces nature's own method of supplying her creatures with energy adequate to meet the needs and conditions of a complex evolution. Hence the congenial and energizing influence of fruit, vegetables, milk and honey on the system—having the quality to combine taste with virtue, impulse with permanence, and stimulation with normal growth.

So far so good. But while the power of Nature to maintain the working standard of constitutional health, has its seat and condition in a normal physiological balance of natural salts and sugars obtained from the fruits and vegetables—yet, however, to meet the exigencies of obverse environments and abnormal situations, nature in her ever present resourcefulness, often takes recourse to abnormal means. Thus in the great vital economy of existence, what may stand for unhygienic and illogical food-combinations under one set of conditions, may under the stress of reverse conditions constitute the very means necessary to restore a disturbed physiological balance. We may therefore find, that in the countries of the north, where fruits are scarce or absent, a moderate indulgence in extracted sweets is not only nutritionally tolerable, but even necessary. Jellies, jams, and fruit-preserves in general while in themselves, practically speaking, are mere dead and embalmed fruits—are nevertheless under certain conditions valuable carriers of muscular and nervous energy. To the extent, however, that nature is adequate

to supply our dietary directly from her own faultless cuisine—where the sun does the cooking and the earth the seasoning—any procedure to stimulate taste and appetite by artificial mixtures, will result only in invoking the Nemesis of a disordered stomach and liver. Only in regions where nature is barren and fails to meet the demand of our system for a balanced nutrition, are we justified in preparing artificially, the required food-supply.

The employment of sugar in the preservation and seasoning of fruit has a logical and hygienic basis in the fact that sugar is a natural ingredient in fruit, being one of its main, and vitally indispensable elements. With perhaps the exception of the lemon, all full grown and perfectly ripe fruits are sweet and congenial both to the palate and to the gastric juice. When on the other hand the fruit has had an incomplete ripening, owing to insufficient exposure to the sun, or to an excess of humidity in the air or soil, or perhaps in most cases to premature picking—its acidity has had neither the time nor conditions to accomplish its evolution to a natural sweetness. To avoid the corrosion which this unmodified acidity may have upon the lining of a sensitive stomach and intestine it may be advisable to artificially increase the sugar percentage of the fruit—with or without cooking. This sweetening of the fruit tends to balance up its deficiency of sugar, and by a neutralization of its acidity, bring about an arbitrary—though under the circumstances, — an hygienically defensible ripening.

But while "free" sugar may thus have a field of usefulness in its relation to fruit, the same principle does not hold good with regard to sugaring of vegetables and cereals. In the natural ripening of the latter, sugar is of a subordinate importance, as the end product of grain is found neither in sugar nor acid—as in the fruit—but in fats and proteids, which so far from requiring artificial sugar for their ripening and assimilation,—their very treatment by sugar causes a surcharge for which there is no constitutional need. Unable to accommodate to the expansive force generated by the abnormal increase of its sugar percentage, the cells of the starch burst under the strain, and through their molecular rupture invite the action of bacterial decomposition and subsequent generation of gases, destructive to health and life.

From this it is readily seen how a number of dishes of most incongruous character, jumbled together without reason or season to make up a single meal, means a hit-or-miss game, with the stakes made up by man's greatest physical possessions—health, strength and usefulness;—with life itself as its last risk. Hence while an occasional accommodation in our cooking to the craving of artificial sweets may at times have a congenial effect upon human nutrition—in ten cases out of twelve, the venture is disastrous. It is only in emergencies, when fresh, ripe fruit is inaccessible, that recourse should be taken to fruits artificially preserved and made palatable.

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SUGAR AS A STIMULANT.

As a gauge of tolerable accuracy we may classify natural sugars as *foods,* and artificial sugars as *stimulants*. And while the direct and immediate action of the two sugars may appear to be identical, their remoter effects on the system, are altogether different. Thus the stimulation derived from natural sugars has its basis in the rapid but homogeneous unfoldment of the integral force-units contained in the molecular balance and nutritional completeness of the natural compound; while the stimulation due to artificial sugar assumes the character of a mechanic impulse—resembling the motion imparted to a derailed vehicle from the forcible contact of an assisting motor. In the former case the motion is self-generative,—the resilience of released constitutional energies, organized and made permanent;—in the latter it is the action of transfused force currents, induced from without in place of being generated from within. The one identifies itself with the system as a permanent, self-sustaining force center—the other represents the action of a whip on a tired out horse, which however may be instrumental in saving both the horse and driver from a threatening collapse.

THE LATEST RESULTS OF SCIENTIFIC EXPERIMENTATION WITH REGARD TO THE VALUE OF SUGAR.

As a sum total of the experiments carried on in the various laboratories and experimental stations throughout the world, concerning the character of free sugar as food, we find the following statements as generally accepted points of agreement.

First—When the organism is adapted to the digestion of starch, and there is sufficient time for its utilization, sugar has no positive advantage over starch-foods, in supplying muscular energy during a protracted period of labor.

Second—The positive advantage of sugar over starch lies in the fact that it furnishes the needed carbohydrate material for organisms, that have as yet only a little or no power to digest starch. Consequently in the extract or "free" sugar obtained from milk (sugar of milk) the infant has a valuable asset in the composition of his diet.

Third—In time of great exertion and under the strain of exhaustive labors,—childbirth may be counted as one,—the rapidity with which sugar is assimilated gives it a certain advantage over starch. Its rapid conversion or translation into heat or energy, creates a flush of exhilaration and sense of available strength, which may suffice to carry the individual over the critical moments of stress. It is this rapid-firing power of the sugar with its swift systemic invigoration that makes sugar so highly relished by people of high-strung, emotional, nerve-exhausting temperament. It is this quality of force in the sugar which is instinctively recognized and coveted by the nervous, the irritable, whose main expenditure lies in loss of energy. The use of "free" sugar, when applied to stimulate sluggish currents of energy, and raise them into higher levels, has a striking similarity to the starting of a quick fire by throwing cotton or coal-oil into a stove. The evolution of heat is instantaneous, but of only passing permanence; while the injury wrought to the stove may be permanent. On the other hand we may readily see, in the light of the illustration, how in using sugar for the purpose of modifying the hyperacidity of imperfectly matured fruit, we gain the same advantage as by using a rapid firing material in connection with, and to the aid of, the slow combustiveness of green, or incompletely seasoned firewood.

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HOW SUGAR MAY BE MADE A SAFE OR UNSAFE ELEMENT IN OUR DIET.

Reports have lately come from experimental stations from all over the world, as to the great value received from sugar as a stimulating, revivifying agent. In the German and French Armies startling feats have been exhibited on a basis of free sugar as a physiological force,—equipping the soldiers with increased vitality and endurance to defy fatigue and hardships without the assistance of ordinary food. No less remarkable is its value as a therapeutic agent, especially in cardiac insufficiency. Dr. Hausch and Prof. Behrendes of Berlin, Germany, are enthusiastic over their successes in sugar therapy, in diseases of the heart. Patients suffering from general debility have found in a judicious administration of sugar, a new source to energy and health. In most cases however the sugar solutions are medically prepared and administered hypodermically, as ordinary cane sugar was found incongenial to the assimilative functions, often in a large percentage thrown out from the system by the kidneys.

An incident which may shed some new light on the subject of sugar-therapy is reported from a Hospital in Edinburgh, Scot-

land. A patient afflicted with a severe attack of rheumatism had been advised by his physician to "cut out" sugar from his daily rations. In consequence the rheumatism was cured, but in the course of time symptoms of general debility and nervous breakdown began to show up. In his distress he returned to his old physician and asked for advice. Connecting the leaving out of sugar from his diet, with the new affliction, the physician, by way of experiment allowed him a certain amount of sugar daily. From the very start the patient showed signs of recovery, though the report did not refer to the fate of the old rheumatism.

These and other experiments all go to show that the human nutrition can be greatly affected, both for good and bad by the action of sugar. It is moreover in the very fact that sugar in its free form is an abnormal substance that it possesses value as medical agent, and which on the same, distinctly and unmistakably points out its proper place in the human dietary. For while its action as a chemical absorbent is of greatest value toward breaking up of accumulated tissue-poisons in the system, yet its further action on other tissues, viz. kidneys and liver, may and does give rise to remoter complications. The safer way to employ sugar as medicine is perhaps to limit its application to external tissues, as it must be carefully realized that the transition stages from sugar as food and force, to sugar as stimulant and poison is obscure and indeterminable, and safe to pursue only under the guidance of painstaking scientific experimentation. The very allurement connected with the taste of sugar endangers its employment and demands a double caution: to scrupulously refrain from its indulgence, either in the form of food, force or medicine unless prompted by motive of *health and strength for the purpose of general usefulness.*

A NEVER ENDING WARFARE.

THERE is, from the cradle to the grave, a constant warfare between the body and the germs of infectious disease. No matter how careful we are, all of us at one time or another are bound to get these germs, which doctors call "bacteria," in our systems.

Indeed, bacteria may be found on the skin and in the throat of many people at almost any time. That is the way pimples, boils, carbuncles, and erysipelas occur; such are in reality diseases for which the pus-forming germs are responsible. Bacteria also attack the walls of the throat and of the upper respiratory passages; and so result tonsilitis, sore throat, quinsy, the grippe and so on. The pneumonia germ is present in the mouth of many healthy people, who nevertheless don't come down with pneumonia; and it is the same way with the diphtheria and other germs. How, then, are such diseases ever escaped? The germs enter the body as unwelcome guests; and try to live board-free at the expense of their "host." Or they attack the body; try to get their food out of it; try to use it for a soil in which to grow and multiply, and cause disease by means of the poisons (toxins) they generate, which poisons spread through the lymph and blood channels and produce symptoms characteristic of the respective diseases.

To defend itself the body kills the germs; day by day and year by year the never-ending struggle continues, the bacteria constantly attacking, the body constantly fighting to keep them out. The toxins carried through the body by lymph and blood, cause sickness by poisoning the cells and tissues and organs. In most cases it is really not the germs themselves, but their toxins, that cause the sickness. The body destroys toxins by producing anti-toxins. The anti-toxin does not kill the germs, but it does destroy their toxins; and thus are cells and tissues saved from being poisoned until in other ways the body can kill and dispose of the germs themselves.

But how does the body kill germs? If you should examine a drop of blood with a microscope you will find a great number of blood cells floating in the blood fluid. These cells are of two kinds; the red blood cells,

whose business it is to carry oxygen (the life-giving gas) throughout the body, their work being to kill bacteria; and the white blood cells.

A white blood cell approaches a germ and floats about it, or swallows it. Then the corpuscle tries to digest and kill the germ; whilst on the other hand the germ tries to grow in the corpuscle and use it for food, and as a soil to multiply in.

When the corpuscles are victorious the germs are destroyed and the disease stopped; but if the germs are too numerous and powerful the corpuscles are killed and the disease goes on until the body dies.

Besides the white corpuscles the body has another weapon for its defense against germs—the germicidal (germ-killing) substance of the blood. There is always some of this substance (opsonin) in the blood of a healthy person; and when disease germs attack the body more of this germicidal substance appears in the blood and helps to kill them. "Opsono" means "I cater to"; and the opsonins really supply the white blood cells with sustenance, so that they may be fit for the battle they must wage. So it should be our constant endeavor to keep up the resistance of our bodies to germs.

Just as the seeds of the plants lie in the cold earth waiting for the warmth of spring to come, so germs often lie in the body waiting for a chance to grow. And the only safe way is to keep the body always in health and vigor; so that it may be able to kill any disease germs that may enter it.

Overwork, exposure to the elements, to cold and to heat, wet feet, hunger, fatigue, worry, lack of fresh air and sunshine, lack of sleep, alcohol, too much tea-drinking—all of these factors injure the body, weaken the strength of the white corpuscles, and lower the germicidal powers.

It is everyone's clear duty to himself to keep his own body in health—to care for this precious body intelligently and carefully; to fail to do this would be no more sensible than for the soldiers in a fort to open the gates and lie down to sleep in the midst of their enemies.

Professor John W. Ritchie, in his Primer of Sanitation, well observes that a wise general does not risk the fate of his army on a single battle line: but behind the first line of soldiers he places a second line; and behind the second line of defense he has still a third line, in case the enemy should break through the first and second lines.

So in our warfare with disease germs we must not depend on any one line of defense. We should (1) try to keep the germs from being spread about; (2) we should guard the gateways (the skin, the nose, the mouth) by which they enter the body; (3) and within the body we should maintain the defenders at their post.

For sooner or later, just when we can never tell, our unsleeping enemies (the disease germs) will pass through the first and second lines of our defense; and if, then, the bodily health is low, and its defenders weak, we are likely to succumb, perhaps fatally.

IN THE YEAR 1913.

The Honorable Stephen Coleridge is the son of Lord Chief Justice Coleridge, strange as it may seem, as the father was a very able and a very sensible man. The Honorable Stephen Coleridge is one of the best known of the English leaders of the anti-vivisection movement, and is also familiar to Americans on account of two trips over here. Here is the latest contribution to science by Mr. Coleridge that has fallen under our eye:

"Knowledge and reason have always been, and must always be, miserable bases on which to build conduct, character, and life. It is true that Science has conferred some benefits upon mankind; it has enabled the slothful to be more slothful, the self-indulgent to be more self-indulgent, and the loquacious to be more communicative. It may have, perhaps, prolonged human life by a few years, or even have kept alive some who had better be dead. But the accumulation of knowledge has no relation to the acquisition of wisdom or the conservation of virtue; and Science has no exhortations for us on the beauty of unselfishness, on the nobility of self-sacrifice, on the splendor of patriotism, on the sanctity of honor, or on the glory of God, and these things matter more to us than the origin of the species, the excretions of earthworms, the pressure of the blood in dog's veins, or the battles of bacteria."—*Harper's Weekly.*

RURAL SANITATION.

SANITATION OF A COUNTRY HOME. A LECTURE.

By H. Burdett Cleveland.

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It is generally recognized that residence in the country, away from the crowded conditions of villages and cities is conducive to good health. But such is not necessarily the case unless living conditions are sanitary, the water supply is pure and the domestic wastes are properly disposed of. Let us consider, then, the most important factors in the proper sanitation of a country home.

Most necessary to the health of the individual in any home is a pure and abundant supply of water. Strange to say, this important requisite of health has, in the past, been too often neglected in the country home. The well may have been located near a leaking privy, vault or cesspool, the curbing may not have been carried above ground when the well was located in low ground subject to surface wash and even barnyard or privy drainage may have reached the well waters; or the well may have been dug in shale or gravel directly in the path of the ground water flow which at some nearby point was subject to contamination from privies and cesspools and as a result the family has been suddenly stricken with typhoid fever.

Most fortunate are those country homes blessed with a water supply piped from a spring whose location is well removed from the possibilities of contamination so numerous near the house and barns. In the absence of such a source of supply great care should be exercised in the location and construction of the well. The site should be selected far enough from cesspools, barn-yards and privies, the distance depending on the porosity of the soil, so that no danger of contamination of the well waters by sub-surface flow will result. Precaution should be taken against the pollution of the well by surface wash, by raising an earth mound around the well curb, by carrying the curb a foot or more above this mound and making the curb and platform water-tight. It is often desirable to cement the cover and the sides of the well for ten or twelve feet below the ground surface in order that surface water polluted by infected material may not readily leach into the well.

From time to time well waters should be analyzed, remembering the old adage stated in a new form, that an ounce of precaution is worth far more than a pound of regret.

The greatest care should be exercised in disposing of excretal wastes. Where inside flush closets are not installed and outside privies must be maintained, they should be located at a considerable distance from the house and especially from the dining-room and kitchen. Removable water-tight boxes should be used for frequent removal of the wastes or tight vaults should be provided so as to keep out the common house fly,—a well recognized carrier of disease germs.

The location of all privies should be such that well waters may not be contaminated by drainage from the vaults or the cellars of houses and the soil surrounding the houses may not be polluted. Especial care should be taken to prevent such contamination where the soil is loose and gravelly or where underlying rock occurs, since the danger of transmitting disease is much greater under such conditions.

When a running water supply is enjoyed the liquid wastes from kitchen sinks and inside closets must be disposed of.

The inside plumbing should be water-tight and of modern type. Each fixture, such as water closets, sinks, etc., should have separate water seal traps to prevent sewer gas from escaping into the house and each trap should preferably be separately vented by means of a pipe leading from the top of the trap to the main soil pipe or to a main vent pipe extending to the roof.

If the soil on the premises is well drained, loose and well ventilated, and the ground water level is fairly deep below the surface, we need go to no more trouble than to construct an ordinary dry walled cesspool, provided there is sufficient area to prevent soil contamination

near the dwelling, and provided there is no danger of contamination of wells. The surface indications of this latter danger must be supplemented, if possible, by a determination of the direction of ground water flow and of the fissures in the rock formation, if underlying rock occurs.

Even under the most favorable soil and drainage conditions, the cesspool may be constructed in a scientific manner, and then we may call it a septic tank.

Where the soil is heavy and impervious and it becomes necessary to abandon the common, loose walled cesspool or where for other reasons, a water-tight cesspool is required and the frequent removal of the contents is burdensome, the septic tank is the next development and under its well regulated operation the same biological processes which take place in the cesspool are fostered and encouraged to the fullest extent. The septic or settling tank settles out a large proportion of the solid matter in sewage and in the septic tank much of this is liquefied.

It is very often permissible, on sanitary grounds and with especial reference to the prevention of nuisances in streams to subject sewage to sedimentation or to septic action only before its discharge into a nearby water course. In this connection it should be remembered that the functions of supplemental treatment in sewage disposal systems in which the septic tank is employed, is to nitrify or oxidize the broken down compounds and products of liquefaction which are discharged from the septic tank. Now if the capacity of a stream with respect to its ability to digest or nitrify septicized sewage is sufficient so that such an effluent in given quantities may be cared for without the creation of a nuisance in the stream, the objects of sewage purification is accomplished with respect to one side of the question, if septic action alone is employed.

The other great necessity for the purification of sewage, the protection of water supplies, requires in general additional treatment of sewage over that accomplished by treatment in sedimentation or settling tanks and various means for additional treatment are discussed later.

It is usually desired that sewage disposal plants for institutions or country residences shall be covered and kept out of sight. For this reason what is termed a sub-surface irrigation system is more generally used than any other in connection with the septic tank.

The septic tank itself may be entirely underground.

We will take up the most effective and easily operated systems for sewage disposed for isolated houses, foremost among which is the septic tank system used alone or in connection with sub-soil filtration, contact beds, or broad irrigation.

Considering first the septic tank:

Septic tanks are constructed for individual houses on the same principles that the designs for municipalities are based. There should be a submerged inlet for the sewage and a submerged outlet for the effluent, in order to disturb as little as possible the crust which forms at the surface and the sludge which is deposited on the bottom of the tank. This allows the sewage to enter the tank at mid-depth, and permits the effluent to be drawn off from mid-depth, where the contents of the tank are the clearest and most free from organic matter.

The quantity of sewage to be cared for from any given residence is practically the same as the amount of water used in the house. This amount is variable, ranging from 25 to 150 gallons and upward per person, but the design of sewage disposal plants must be based largely on the organic matter in the sewage to be treated and consequently does not change materially for a given number of persons whether the water supply be abundant or restricted.

On the basis of a water consumption of from 100 to 125 gallons per capita daily, the character of sewage is such that the time of detention in septic tank necessary to effect a proper reduction of organic matter is from eight to twelve hours.

The size of a septic tank for an isolated house or institution may, therefore, be based on the foregoing data, if the water consumption is known or can be estimated.

The tank should be water-tight, from 4 to 6 feet deep and should have a capacity of from 3 to 5 cubic feet per person.

The entrance of sewage to the tank should be effected in such a way as to distribute the flow across the entire cross section in order that every portion of the tank may be effective. This may be accomplished by a separate entrance chamber from which the sewage flows over a wall across the entire width, or by extend-

ing a pipe horizontally across the end of the tank into which the sewage is delivered by the house sewer, and from which it emerges through various openings. This is the usual method, since a grit or detritus chamber is not necessary for small plants.

The flow through the tank should be continuous and the velocity should not be greater than from 1 to 3 inches per minute. Within certain limits, the velocity of flow does not affect the reduction of sewage as much as it does the rate of deposit of sludge, and the lower velocities seem to produce a smaller accumulation of sludge in the bottom of the tank.

Where septic tank treatment alone is necessary, the flow from the tank is continuous to the point of discharge at the stream. But where subsequent treatment is necessary, the effluent from the tank should generally be collected in a discharging or siphon chamber, so that it may be discharged intermittently into the contact bed or into the subsoil pipe system.

We will now take up that method of secondary treatment which is most common and, in general, most feasible,—the subsurface irrigation system. The successful operation of a system of subsoil drains depends almost entirely on the character of the soil. Sand is the best filtering medium. But a light, sandy loam, or a gravelly soil, will care for a septic tank effluent.

The effluent from the dosing chamber is delivered into agricultural tile drains or sewer pipe laid with open joints in parallel lines one foot or so under the ground surface.

The absorption area selected is generally on a slope with the main tile drain discharging into branches which are laid at right angles to the slope or parallel with the contours.

In some soils it is necessary that the main effluent carrier shall be laid with cemented joints in order that the effluent may be turned on alternate days into different sections of the subsoil system. If the absorption area is naturally well-drained, the effluent will seep away into the soil and need no further care. But it is sometimes necessary to prepare the area by constructing under drains beneath the subsoil system, or blind ditches or drains around the lower sides of the plot.

The total length of subsoil piping is dependent on the porosity of the soil. The length of each system, or of each section of subsoil piping into which the dose from the dosing chamber is to be discharged, may be somewhat less than that required to receive the full dose, since during the discharge some of the effluent escapes through the open joints of the piping.

Another method of subsequent treatment employed where area for subsoil systems is not available, or where the soil is heavy and impervious, is to treat the effluent in what are known as contact beds.

The fundamental principle of contact beds is to furnish a medium on which aerobic or nitrifying bacteria may exist, and carry on their work of consuming organic matter and thus reducing complex organic compounds to simple and harmless substances.

The media employed may be broken stone, coke, gravel, furnace slag, clinker or broken brick, depending on whichever is most easily obtained.

The action is not that of mechanical straining primarily, but of biological activity. However, the material of the filter must sometimes be renewed or washed.

The area required for a depth of, say, four feet should be on the basis of 500,000 gallons per acre per day, if the effluent is applied without any special attempt at aeration.

In order to supply oxygen to the bacteria, the beds should be dosed intermittently from a separate chamber and the effluent distributed in as short a time as possible over the entire surface. The discharge from the beds should be sudden and regulated so as to empty the beds quickly after the beds have been filled for a sufficient time for the bacterial action to take place, generally one to three hours.

The foregoing description is that of the fill and draw contact bed system which is rather expensive and not generally employed for small installations.

A better system for the isolated house or institution where a subsoil system cannot be employed, is a trickling or percolating filter. The sewage is discharged in this case by means of troughs or possibly by sprinkling nozzles onto the surface of the beds, and percolates down through the filtering material into an underdrain from which it is discharged into the stream.

The most economical type is the continuous trickling filter which does not require either a siphon or sprinkling nozzle for the application of the effluent to the filter or a timed siphon for the discharge of the effluent from the filter.

A third stage is sometimes introduced, known as sand filtration. The effluent from the contact bed or percolating filter is distributed over a three- or four-foot bed of sand for final purification.

The rate of filtration in sand beds of septic effluent should not exceed 200,000 to 300,000 gallons per acre per day, but may be in excess of this if contact or percolating filters are also employed.

One of the earliest methods of sewage purification was that of broad irrigation, sometimes conducted in the way of sewage farming. This method is especially applicable to isolated locations, where plenty of area is usually available. In this system the sewage is applied directly to the land without previous treatment. A comparatively large area is necessary, since it is found that ordinary soils will not absorb sewage if applied in greater quantities than about 10,000 gallons per acre per day. The sewage is generally delivered in furrows on sloping land. If use is made of the sewage as a fertilizer, those vegetables which are not to be eaten raw are grown on the ridges between the furrows.

Sand filtration without previous septic treatment will care for sewage at the rate of 60,000 to 100,000 gallons per acre per day only. These last named methods of broad irrigation and sand filtration require much oversight and are not, therefore, as applicable to individual installations as the former processes named.

It should be borne in mind that sewage disposal plants to care for the domestic sewage of individual families are subject to different conditions than obtain in the case of municipal plants. There is less uniformity in both the character and the flow of the sewage and the proper design should take these facts into account. In cases where the problem of sewage disposal is at all difficult, expert advice should be sought in order that the principles of sewage purification may be properly applied and considerable difficulty and annoyance saved thereby.

Considerable attention has been given of late to the transmission of disease through the agency of flies and it is hardly necessary to call attention to the need of preventing the accumulation of stable manure and rubbish heaps near dwellings. The importance of cleanly, sanitary surroundings in this respect has been emphasized in many instances and their importance in protecting health cannot be overestimated.

We have considered thus far the disposition of wastes on the ground surrounding the house. It must be remembered that the waste from the lungs in the air we breathe out constitutes as well a menace to health and for this reason the greatest attention should be given to the proper ventilation of living and sleeping rooms. Do not be afraid of fresh air and lots of it. Keep the windows open in winter as well as in summer and wear an ulster if the last coal bill is unpaid. To keep up the physical tone of the body by providing a proper supply of oxygen in the house is to cheat the doctor and the undertaker, and who would not do that.

Finally, stand off and criticise the sanitary arrangements of your own house and grounds as though they were your neighbor's and in all probability you will find several things to do.

Synopsis of Lecture.

Life in country normally healthful but not necessarily so unless:

(a) Living conditions are sanitary.
(b) Water supply is pure.
(c) Domestic wastes are properly disposed of.

Water Supply.

Necessity of pure and abundant supply.
Too often neglected.
Well may have been located:
(a) Near cesspool.
(b) Subject to surface wash.

If pure spring water is not available, well should be:

(a) Located remote from cesspools, barnyards and privies.
(b) Constructed so as to prevent leaching and surface pollution.

Water should frequently be analyzed.

Disposal of excretal and domestic wastes.

Percolating filters:
Construction.
Operation.
Sand filtration:
Description.
Broad irrigation:
Applicability and limitations.
Necessity of careful design of individual sewage disposal plants.

General Sanitation:
  Manure and refuse heaps.
Ventilation.
Outside privies:
  Location.
  Construction.
  Maintenance.
Plumbing.
Disposal of sewage:
  Cesspools.
  Location.
  Construction.
Methods of scientific disposal most applicable to a country home.
Septic tanks:
  Function.
  Design.
  Construction.
Sub-surface irrigation:
  When applicable.
  Description of system.
  Design.
Contact beds:
  Function.
  Construction.
  Operation.

EFFICIENCY NOTES.

"There is some good in every man, much good in some men, infinite possibilities in all men."—E. E. Dodson.

"The man who lacks the courage to make a start has reached his finish."

"It is good to be gratified but dangerous to be satisfied."—Sheldon.

"Preparedness is the practical secret of success. Without it, opportunity means little."

"The men of action are, after all, only the unconscious instruments of the men of thought."—Heine.

"There is more lost by indecision than by wrong decision."

"The indefinite idea produces the indefinite action. The uncertain man produces uncertain results."

"The average man cries for better opportunities; while the fact is that he is literally surrounded with better opportunities but has not fitted himself to make good in any of them."—C. D. Larson.

"Half-way knowledge is all right if you want to go half way to the goal of success."—W. C. Holman.

"Preparation is a safer guide than luck or inspiration."—Creelman.

"Impossibilities are merely the half-hearted efforts of quitters."—Herbert Kaufman.

"Responsibily gravitates to him who can shoulder it."—R. L. Stevenson.

"Few of the things that come to the man who waits are the things he has been looking for."—Bishop Manning.

Alas for the poor fly! He has few friends nowadays. One of the last to be kind to him was the dear old Countess of X. "Julia," said her ladyship, who noticed one buzzing round the window and giving himself a headache butting the glass. "Julia, open the window and let that poor fly out." "But, madame, it is pouring rain." "You are very thoughtful, Julia. Show the fly into the ante-room and let it sit down till the shower is over; then let it out."—*Baltimore American.*

THE LEISURE HOUR.

HISTORY, PHILOSOPHY, FICTION, HUMOR, SATIRE, POETRY.

LEISURE HOUR WAS FOUNDED IN THE BELIEF THAT THE PHYSICIAN IS BUT HUMAN; THAT HE LOVES THE BEAUTIFUL IN THOUGHT AND SENTIMENT AS EXPRESSED IN LITERATURE, AND THAT HE IS AT TIMES SURFEITED WITH TECHNICAL MATTER. SHORT, CRISP CONTRIBUTIONS ON ANY OF THE SUBJECTS NAMED IN THE SUB-HEADING ARE INVITED TO THIS DEPARTMENT.

ANCIENT SYMBOLISM OF THE CAT IN FOLK-MEDICINE AND OTHER FOLK-LORE SURVIVALS.

BY LEWIS DAYTON BURDICK.

How and when the cat came to be associated with, and regarded as a symbol of, the moon are questions which can only be answered by evasion. They belong to prehistoric time and may have antedated the earliest settlements in the rich valleys of the Nile and the Euphrates.

Mäu, the Egyptian for cat, signifies light, and was at one time known to have been the symbol of the sun-god. The cat was held as sacred throughout Egypt. It was especially so at Bubastis, where it was given a sacred burial. There several acres are honeycombed with pits for their receptacle. Sometimes cats were cremated at death, and at other times they were carried amid lamentations to the embalmer, to be prepared with oil and cedar and other aromatic substances, after which they were deposited in the sacred vaults. Thousands of bronze cats have been collected and sold to collectors and travelers.

Cat-headed deities were not uncommon in the Egyptian Pantheon. In the sacred "Book of the Dead" a cat-headed god armed with a sword stands at the twelfth gate of the field of Aaru in the dwelling of Osiris. Bast of Bubastis, sometimes called the Queen of the sky, or inscribed as the Lady of Life, was cat-headed. In the hand of the figure of this goddess was often borne the sistrum.

The sistrum was everywhere more especially used in the worship of Isis, the consort of Osiris, and with him and the child Horus constituting the most celebrated triad of deities in Egyptian history. Isis was also sometimes figured as cat-headed, and was a moon goddess.

The learned Plutarch has written on the sistrum and its significance in his celebrated theosophical essay on Osiris and Isis. The sistrum was a type of creation. It symbolized generation and end, and these were brought about by the changes and motions of the elements. The shaking of the sistrum repulsed evil and restored natural processes. The Lunar sphere surrounded that part of the universe that was subject to birth and death. A cat with a human head was figured on the top of the arch of the sistrum with the head of Isis or other deity below. The cat signified the moon, and its human head, the intelligence and rationality of the changes connected with it. The cat was like the moon in its nocturnal habits and in its pied (tabby) color; the pupils of its eyes grew full and dilated at the full of the moon and became thin and dull during its wane. There was a likeness in its fecundity also, as the total productivity of the seven allotted litters in the cat's bearing period equalled in number the illuminations of the moon. The ancient author concedes, however, that the last statement may be somewhat fabulous, yet we note in passing the survival of the mystic seven in tales of *felis domestica*. The childhood story of the wives with their sacks of cats and kits coming from St. Ives still lingers in the memory, and Lafcadio Hearne has recorded a tradition of St. Pierre that if you eat cat seven times or eat seven cats no witch, wizard or quim-

boiseur can ever do you harm, especially if you eat the cats on Christmas Eve. Leland tells a Tuscan story of undoing the spell a witch in the form of a black cat had wrought upon a child by means of an incantation and a Pandora box filled with ingredients innumerable, among which was a pinch of the hair of the cat and the seven of clubs and the seven of spades.

Isis was gifted in magic power which she had acquired guilefully from her father the sun-god. Thoth, who had the crescent of the moon in his crown and measured time, placed on the neck of the dead the papyrus stem amulet on which often figured a cat, which signified verdure and vigor and protected the members of the body. Thoth was skilled in magic and healing. In a magical formula preserved, belonging to a later period, the great name of Thoth appears as the name answering to the seven vowels, whom each god honors and each demon fears. By this formula any dream desired could be sent to any person, but it must be written on a tablet with a solution of myrrh and put in the mouth of a cat, one black all over which had been killed.

Honored in antiquity with a place in the most sacred associations, how came the position of the cat to be reversed in the history of human credulity? There is no mistake in the sincerity of the belief which prevailed for many centuries that the forefathers of our domestic pets were the arch enemies of mankind. Satan's wiles were accomplished through the instrumentality of cats and the black one was his especial affinity.

Malays guard against permitting a cat to come into the presence of a dead body lest brushing against it the evil spirit in the cat may enter into the corpse bringing it to an unnatural and troublesome life.

In an old Italian spell for bewitchment the skin of a black cat burned and powdered fine was mixed with pepper, pulverized horse-scrapings and earth over which a toad had passed, while the witch chanted:

"Poisoned earth and powder fine
To the powdered cat I join,
'Tis the worst, and yet the best
For my vengeance—for the rest
Catskin powdered; naught is worse;
With the scraping of a horse,
Pepper next to make it good,
Earth well poisoned by a toad;
'Tis a mixture which, when done,
Will rack and ruin many a one,
And they shall know no good or peace,
Nor shall their sufferings ever cease,
Until they humbly come to me
And beg for mercy on their knees."

With the fall of the ancient gods the power of those who ministered with them only worked evil. Milton named Isis among the legions of Satan who,

"With monstrous shapes and sorceries abused
Fanatic Egypt and her priests to seek
Their wandering gods disguised in brutish forms
Rather than human."

In the street and the home the jingling of the bells displaced the sistrum in frightening evil things away.

"In this corner of the cupboard,
I put this bell to drive afar
Pluto and his company,
That in this house they may not come,
Neither in form of dog or cat—
away."

May the bell ringing drive the wretches

"Do you mean to say," said Judge Powell in the trial of Jane Wenham, "that you find her guilty upon the indictment, for conversing with the devil in the shape of a black cat?" "We find her guilty of that," the foreman replied, and the poor creature was sentenced to death, but the craze had spent its force and the crime was pardoned.

Cats were connected with all the baleful influences of the moon. In Yucatan the descendants of the Mayas pinched their tails to drive away an eclipse. As emblems of the devil they were flung into the fires in Paris on St. John's night. The mystic seven returns again in the Hungary legend that every black cat turns into a witch at the age of seven. Grimm gives it as a common saying that a cat of twenty turns witch, and a witch of a hundred turns cat again.

The exit and entrance of a strange cat were ominous. Shylock speaks of some that go mad if they behold one. Tradition says the great Napoleon had a marked fear of them, and that Henry III. of France swooned at sight of one. Cat is used as a word of contempt in "The Tempest" and

"Midsummer Night's Dream," and the rabble are called cats in "Coriolasus." The thrice mewing of the brinded cat was the signal for the assembling of the weird women in Macbeth.

Multiples of three were used in winding up charms and so were valuable in formulas:

"Thrice to thine and thrice to mine,
And thrice again, to make up nine."

The traditional nine lives were part of the accepted outfit of the cat's equipment for his supernatural associations. It is referred to in "Romeo and Juliet" and used by Shakespeare's contemporary Ben Jonson and other poets and dramatists of that period and subsequently.

As a Roman poet said, Diana, the moon-goddess, turned into a cat, when, in the war of the Titans and the gods, the latter were put to flight, so it was said that old women turned into cats in Italy, Germany and Scotland. Four ministers attested the truth of the tale which Captain Burt brought from Scotland in 1730, that the leg of a cat cut off by a man it attacked turned into the leg of an old woman. The serpent woman Lilith who tempted Adam was pictured in the sixteenth century with the body of a cat.

The drawing of the blood of a witch, according to the lore of sorcery, restored her to her normal bodily form, and this is perhaps the key to the understanding of the widely prevailing belief in the efficacy of cat's blood in folk-medicine. Blood from a cat's tail cured erysipelas and epilepsy. If the cat was black, it cured shingles in Maine and ringworm in Cape Breton. Hair of the tail cured a stye if used on the first night of the new moon. The blood of a tortoise shell cat was a remedy for warts but only efficacious during the month of May. A belt made from the skin of a black cat dried in the autumn sun was worn around the waist for rheumatism by Negroes of Louisiana.

The drawn blood of the cat broke the spell of bewitchment that held the victims enthralled, but the moon's changes controlled the months and it was only when her phases were favorable that magic was effective. On certain moon days Babylonian kings refused medicine and Archbishop Theodore said bleeding was dangerous.

As old poets said the moon was "the governess of floods," "the watery star," "the ladye of moisture," and the "mother of all humors," the movements of her familiar face have been eagerly watched from time immemorial for omens of changes in the weather. If the cat scratched its ear it was a true sign of rain, and if it sat with its back to the fire, as the North Carolina mountaineers said, a cold snap was inevitable. An old English poet wrote,

"True calendars as pusses eare
Wash't o're to tell what change is neare."

Washing the cat, pouring water on it, or taking it into the river and splashing it around and letting it escape are some of the magical ceremonies for bringing showers. The cat should be black to simulate the black cloud that brings the rain.

In Australian myth the moon was a native cat that fled from a man jealous of it and has been wandering ever since. Freyja was a Norse moon goddess and had four names, each identified with one of the moon's monthly changes. She was famous in love affairs and fond of her cats, two of which drew her car. With this she went to the funeral of Balder and rode to the battle fields of Odin, with whom she shared the slain. With the dead she is associated in the under world and even there her cats accompanied her and became the emblems of nighthags and witches, and in the tales of witches' dances in the middle ages the musician sometimes used a cat's tail for a fife.

Freyja was a friend of woman and assisted in childbirth and marriage, though there are legends of trouble with her husband because of her excessive love of finery. A saying survives that a bride will have fine weather at her wedding if she feeds the cat well so as not to offend the goddess. Another says that a maiden who is fond of cats will have a sweet tempered husband. In some countries a cat has been a favorite bridal gift, bringing a happy wedded life. The sneezing of a cat was a lucky omen for a woman about to be married, but it brought bad luck for a bride to meet one on the way to the church.

FAMILY TREES.

It was a delicious Hibernicism of Oliver Wendell Holmes that "one should be careful in the selection of his ancestors;" this of Holmes is as sound in logic as the statement attributed to Paracelsus, that it was not the fault of David, it was not the fault of Bathsheba, but it was the fault of Solomon. Be these things as they may, to be well-born, or eugenized (if one may coin the word), is fortunate in a world so full of agencies inimical to existence; though the reverse kind of birth need by no means argue an untoward or hopeless future.

Consider first a family tree that must have enraptured Galton: Jonathan Edwards, the great divine and one time president of Princeton, was born in 1703. Of his descendants 1394 have been identified, not one of whom was ever convicted of crime, and most of whom have occupied positions of honor and trust: among these were 295 college graduates (college graduates, as every one knows, becoming saints by Commencement day), 12 college presidents, 65 college professors, 1 vice-president of the United States, 3 United States senators, 60 physicians, 100 clergymen, 75 army and navy officers, 60 prominent authors, 100 lawyers, 30 judges and 80 public office holders.

It would seem there are many families in which for several generations have been born great scientists, physicians, poets, beautiful and noble women, painters, musicians, clergymen, lawyers, philanthropists. Among fifty great poets, including Burns, Byron, Goethe, Heine, Schiller, Milton and Tennyson, more than a score had illustrious family connections. Among forty painters, including Michael Angelo, Correggio, Raphael and Van Dyke, more than twenty had great relatives. Among musicians Sebastian Bach's family, beginning with Weit Bach in 1550, continued through eight generations to produce musicians, 29 of whom attained real and solid eminence. And it would seem, indeed, that intellectual aptitudes and the persistence of noble ideas and of tender ideals, oftentimes becomes intensified in the fortunate posterity.

On the other hand, instances of abnormal heredity fill the treatises on psychiatry. One need but cite the following, also from *The Medical Review of Reviews*: Max Jukes, born in 1720, had 1,200 identified descendants, of whom 130 were convicted of crime; and this family are considered first and last to have cost the communities in which they elected to live considerably over a million dollars. The tally follows: 300 in the poor house, 300 died in childhood, 440 syphilitic or otherwise viciously diseased; 400 physical wrecks; 50 notorious prostitutes, 7 murderers; 60 habital thieves who averaged 12 years in jail.

So oftentimes a mental aberration or disease in the parent may be perverted into a immorality or even a criminality in the unfortunate child; moreover what may begin as merely a bad habit will, in the course of several generations intensify itself, like the crescendo in music, until a monstrously wicked strain is manifest.

We are here reminded of Hawthorne in one of his sombre moments, in *The House of the Seven Gables*. The past lies upon the present like a dead giant's body, so that it is as if a young giant had to waste all his strength in carrying about the corpse of an old, anatomistic giant. We sleep in dead men's houses; we are sick of dead men's diseases; we live in dead men's lives, etc.

Yet much of what is termed bad heredity is surely a sort of fatalism apart from any working of hereditary law—a fatalism developed after birth, when the child realizes the unhappy nature of its parentage. Indeed, Mr. Wm. A. Pinkerton, the famous detective, recently declared, "There is no criminal class. I mean hereditary criminals. My contention has always been that poverty and environment were the chief causes of making criminals." And in his experience it by no means always follows that the children of vicious parents become vicious.

Moreover, heredity is but one of the influences which go to shape individual destiny. Other influences at least as powerful are post-natal environment and the human will. Surround from his birth an infant born of diseased, or starved or alcoholic or depraved parents, with salubrious factors; assure a normal functioning of his body; bring him when old enough under the benignant influence of religion, and especially of prayer, with an ignorance, if possible, of the nature of his family past— and an impressively "degenerate" family tree may end with his birth. Especially if the will, the mightiest force in all the cosmos, can be trained to bear upon the situation.

Elizabeth A. Irwin, field worker of the committee on hygiene of school children of the Public Education Association, put the question to the children in the course of an inquiry into feeble-mindedness in pupils. But these particular answers came from children who are not feeble-minded, and Miss Irwin thinks that they give a better picture of the home life of the different children than a bookful of description. Here are the answers, also from normal children, to the question, "What is a horse?":

He's what drags your father's wagon.
He's what earns a living for you.
He wears his own kind of clothes.
and leaves his master beat him.
My sister says a horse is a camel; but I don't know yet.
Around our block they say it's a cow; but I don't think so.
He's all skin and bones, and eyes and things.
A horse is meat.

The next question put to the children was, "What is the difference between paper and cloth?" If you don't believe that the children really gave the following answers, ask Miss Irwin:

Clothes you wash for a living, and paper you wrap 'em up in when you take 'em home.
With cloth you wash the window, and paper you stick in when the window's broke.
On paper flies stick; on cloth they don't.

Could a page of word painting give a better picture of life in a block in the slums of the upper West Side than those definitions, or than the following answers to the question, "What is the difference between a butterfly and a fly?":

A butterfly sits on flowers, and a fly sits on your bread.
A butterfly has nice ways, but a fly, now, is a bad thing.
A butterfly you leave fly, but a fly you swat.
A fly buzzes when it flies, but a butterfly just flies.
A butterfly flies in the sun, but a fly stays in the house to fly.
A butterfly has wings all white with flour, but a fly has wings like rubber or celluloid.
Flies I seen, yes; but we don't have no butterflies around our block.

Here are some more of the questions and answers, taken at random:

"What is a spoon?"

"It is a vehicle that you eat things on."

"What would you do if you were going to take part in an important affair?"

"I'd hire a coach first."

"Why do you think it is better to judge a person by his actions than by his words?"

" 'Cause. S'pose he lied."

"Honor the physician with the honor due him; for the uses which you may have of him; for the Lord hath created him. The skill of the physician shall lift up his head, and in the sight of man he shall be in great admiration. The Lord hath created medicines out of the earth, and he that is wise will not abhor them. Was not water made sweet with wood that the virtues thereof might be made known? And He hath given men skill, that He might be honored in His marvelous works. With such doth He heal man, and taketh away their pains. Of such doth the apothecary make a confection; and in His works there is no end; and from Him is a sweet odor diffused around. My Son, in thy sickness be not negligent to pray unto the Lord, and He shall make thee whole. Give a sweet savour, and a memorial of fine flour, and make a fat offering; then give place to the physician, and he shall make thee whole; for the Lord hath created him. Let him not go from thee, for thou hast need of him. There is a time when in his hands there is great success; for they shall also pray unto the Lord, that he would prosper that which they give for ease and remedy; to prolong life. He that sinneth before his Maker, let him fall into the hands of the physician."—*Ecclesiasticus.*

BOOKS.

We neglected to state in our Book Reviews of July last that Professor Vorwoon's fine book on Irritability is published by The Yale University Press, New Haven, Conn.

ALCOHOL AND HUMAN EFFICIENCY.

The human organism is the superbest and the most serviceable machine ever contrived on this planet; and many among us are still sufficiently anthropocentric in our notions to consider it the supremest cosmic product. It is, therefore, nothing short of tragic how frequently, by means of alcohol, the man-machine deteriorates, gets creaky and uncertain in its mechanism, breaks down, and goes to the scrap heap long before the term of its normal usefulness.

"Intemperate youth hands over a worn out body to old age:" worse yet, a body thus worn out seldom gets beyond maturity, seldom, indeed, gets much into middle life.

Those who are charged with the conduct of great commercial and industrial enterprises must ever seriously consider this degenerating agency. For example, managers of railways are bound to require either very moderate use of alcohol among their employees; or to insist upon total abstinence. Intemperate railway employees have been found unable to recognize green and red, the two colors most exclusively used in operating trains. So unsuspected might this abnormality in vision be that only an accident, with loss of human life, might reveal the engineer's inability to recognize the signals. Such "toxic amblyopia"—which comes also from the inordinate use of tobacco— varies in degree from slight dimness of vision, through the inability to recognize colors, to seeing everything grey, and thence to total blindness. Those who are every day responsible for the lives of thousands of passengers would themselves be criminal were they to take the risk of engaging such men.

Dr. G. B. Cutten, in his excellent book, The Psychology of Alcoholism, finds that among 138 "visual defects" 64 were hard drinkers, 45 used both alcohol and tobacco to excess, and 23 were inveterate smokers; this leaves but six cases due to diabetes and other causes.

The neuron (the nerve cell and its fibres) is the basis of all psychism, from rudimentary protoplasmic life, up through sensation, motor activity and correlation, to speech, memory, ideation, will, judgment and divine reason—it is this neuron which is of all tissues in the body the most affected by inordinate alcoholism, and especially by the drinking of fusel oil or wood alcohol whiskey, about the only kind which many poor men get. The neuron, progressively shrinking, becomes in time a mere shell with disintegrated debris, in the place of a once former virile entity, of a once epitomized mind.

Cutten holds—and many eminent psychiatrists agree with him—that the surest cure of the drink habit is offered by religion. In three-fourths of the cases thus treated there is never a desire for a return to alcoholism, nor indeed for another drink; and the man seems really reborn and made whole again.

NUGGETS.

(From Strictly Business, by O. Henry.)

On the surface I have traveled many times around the world in a golden airship wafted on two wings—print and dreams. I have seen (on one of my imaginary tours) the Sultan of Turkey bowstring with his own hands one of his wives who had uncovered her face in public. I have seen a man in Nashville tear up his theatre tickets because his wife was going out with her face covered—with rice powder. In San Francisco's Chinatown I saw the slave girl Sing Yee dipped slowly, inch by inch, in boiling almond oil to make her swear she would never see her American lover again. She gave in when the boiling oil had reached three inches above her face. At a euchre party in East Nashville the other night, I saw Kitty Morgan cut dead by seven of her schoolmates and lifelong friends because she had married a house painter. The boiling oil was sizzling as high as her heart; but I wish you could have seen the fine

little smile that she carried from table to table.

If you are a philosopher you can do this thing: you can go to the top of a high building, look down upon your fellow-men 300 feet below, and despise them as insects. Like the irresponsible black waterbugs on summer ponds, they crawl and circle and hustle about idiotically without aim or purpose. They do not even move with the admirable intelligence of ants, for ants always know when they are going home. The ant is of a lowly station, but he will often reach home and get his slippers on while you are left at your elevated station.

Man, then, to the housetopped philosopher, appears to be but a creeping, contemptible beetle. Brokers, poets, millionaires, bootblacks, beauties, hod-carriers and politicians become little black specks dodging bigger black specks in streets no wider than your thumb. From this high view the city itself becomes degraded to an unintelligible mass of distorted buildings and impossible perspectives; the revered ocean is a duck pond; the earth itself is a lost golf ball. All the minutiae of life are gone. The philosopher gazes into the infinite heavens above him, and allows his soul to expand to the influence of his new view. He feels that he is the heir to Eternity and the child of Time. Space, too, should be his by right of his immortal heritage; and he thrills at the thought that some day his kind shall traverse those mysterious aerial roads between planet and planet. The tiny world beneath his feet upon which this towering structure of steel rests as a speck of dust upon a Himalayan mountain—it is but one of a countless number of such whirling atoms. What are the ambitions, the achievements, the paltry conquests and loves of those restless black insects below compared with the serene and awful immensity of the universe that lies above and around this insignificant city?

It is guaranteed that the philosopher will have these thoughts. They have been expressly compiled from the philosophies of the world and set down with the proper interrogation point at the end of them to represent the invariable musings of deep thinkers on high places. And when the philosopher takes theelevator down his mind is broader, his heart is at peace and his conception of the cosmogony of creation is as wide as the buckle of Orion's summer belt.

Knowledge he had kidnapped from cyclopedias and handbooks of useful information; but as for wisdom, when she passed he was left sniffling in the road without so much as the number of her motor car. He could and would tell you the proportion of water and muscle-bearing properties of peas and veal, the shortest verse in the Bible, the number of pounds of shingle nails required to fasten 256 shingles laid four inches to the weather, the population of Kankakee, Ill., the theories of Spinoza, the name of Mr. H. McKay Twombley's second hall footman, the length of the Hoosac Tunnel, the best time to set a hen, the salary of the railway post-office messenger between Driftwood and Red Bank Furnace, Pa., and the number of bones in the foreleg of a cat.

The sun has risen on the Arabian nights. There are no more caliphs. The fisherman's vase is turned to a vacuum bottle, warranted to keep any genie boiling or frozen for forty-eight hours. Life moves by rote. Science has killed adventure. There are no more opportunities such as Columbus and the man who ate the first oyster had. The only certain thing is that there is nothing uncertain.

This open letter "To John," in the "personal" column of a weekly paper: "To John—If you'll come back home, John, I promise not to run for office—if I git a chanst—and not to search your pockets when you come home, as usual, in your cups; neither to find fault with you more'n what's necessary for your own good, and not to throw up to you any more 'bout me havin' to pay for the marriage license; and not to tell you my family is better'n your'n—though Lord knows it IS. So I close, hoping these few lines will find you on your way home, where any man with a grain o' common sense orter be."—*Atlanta Constitution.*

NURSING DEPARTMENT.

EDITED BY FRANKLIN W. BARROWS, M. D.

THOUGH WIDELY DIFFERING IN FUNCTION, THE ULTIMATE AIM OF THE NURSE IS THE SAME AS THAT OF THE PHYSICIAN, THE RELIEF OF SUFFERING AND THE SAVING OF LIFE. CULTURE, HELPFUL INFORMATION AND A BETTER UNDERSTANDING OF RELATIONS, LEADING TO AN INTELLIGENT CO-OPERATION IN THIS COMMON AIM, ARE THE OBJECTS OF THIS DEPARTMENT.

RAISE THE INFANT FROM DESTRUCTION'S WAVE.

A SUBSCRIBER has resurrected a quaint bit of poetry "from an old school reader —probably over fifty years old or more." She finds it so completely opposed to our present day teaching that she sends it as a curiosity of literature, which indeed it is!

THE DROWNING FLY.

1. In yonder glass behold a drowning fly;
   Its little feet how vainly does it ply!
   Its cries we hear not, yet it loudly cries,
   And gentle hearts can feel its agonies!
   Poor helpless victim—and will no one save?
   Will no one snatch thee from the threat'ning wave?
   Is there no friendly hand—no helper nigh,
   And must thou, little struggler—must thou die?

2. Thou shalt not, whilst this hand can set thee free;
   Thou shalt not die, this hand shall rescue thee!
   My finger's tip shall prove a friendly shore;
   There, trembler, all thy dangers now are o'er;
   Wipe thy wet wings and banish all thy fear:
   Go, join thy num'rous kindred in the air;
   Away it flies, resumes its harmless play,
   And lightly gambols in the golden ray.

3. Smile not, spectators, at this humble deed;
   For you, perhaps, a nobler task's decreed:
   A young and sinking family to save;
   To raise the infant from destruction's wave!
   To you, for help, the victims lift their eyes:
   Oh! hear, for pity's sake their plaintive cries;
   Ere long, unless some guardian interpose,
   O'er their devoted heads the flood may close!

ANON.

In these fly-swatting days such sentiment as the above falls upon the ears of a heartless generation—so far as the fly is concerned. The trouble with the fly is that we have a lot of new evidence since the anonymous poet wrote these tender verses, and every line of evidence makes it worse and worse for the fly. And so we are crusading against the fly, young and old, all of us—that is to say, *nearly* all of us, and would it were quite all! We think it is but right to teach even the children eternal enmity to the fly and other vermin, because these pests make this world unsafe for beings of infinite worth and usefulness compared with the best insect that ever lived. We are wiser than the knowing ones of fifty years ago, and if we throttle some of the sentimentality that made such a fine appearance then it is only that we may cultivate in its place a wholesome fear of dirt and pestilence and a determination to make this world a safer place for men and women and useful creatures to live in. We are very willing to "disturb the balance of Nature" if such disturbance must be, in order to accomplish our benevolent purpose.

The poet has charged his last stanza with a saving sentiment. We will all endorse it. It is indeed for us to save "a young and sinking family," "to raise the infant." "The victims lift their eyes" literally to us. We are working at "a nobler task" than that which the poet enacts in his story, and we find that in order to perform our "nobler task" with credit we must sentence to death every fly that can be reached by the long arm of civilization. We will take up the task the poet suggests—and *swat the fly*.

Now we hear some gentle reader murmur,—"Ah, but have we not parted with something sweet in our lives when we put aside the generous motive of these old verses, and replace it with heartless warfare against the helpless insects who surely do not wish to harm us?"

Piffle!

THE COSTLINESS OF RATS AND OTHER VERMIN.

A BRIEF review of this question in the *Journal of the American Medical Association* tells us that rats are an exceedingly expensive luxury. It adds:

> A recent article in the *Farm and Fireside* discusses the amount of damage done in this country by rats, and estimates that there are in the United States at least 300,000,000 of these animals, alike destructive to property and dangerous to health. Rats are said to destroy a hundred million dollars' worth of grain every year in this country, or enough to feed one hen for every man, woman and child in the nation. The annual cost of rats to the nation is estimated at $360,000,000. In addition, the rat population of the country forms a fertile field for the dissemination of bubonic plague, which only needs a starting-point in any of our seaports to spread throughout the country and cause the loss of thousands of lives. In the same issue of the *Farm and Fireside*, but in a different department, appears an article on the cattle-tick, in which it is estimated that the difference between the market value of an animal free from this parasite and one infected with it is about $8 per cow, and that the cattle-tick is to-day costing the stockmen of the country a billion dollars each decade, or a hundred million dollars each year. The discovery and development of bacteriology showed that man had been carrying on for centuries an unconscious struggle with the lower forms of vegetable life. Recent additions to our knowledge of the habits and characteristics of vermin show that an equally relentless struggle has been going on between man and the lower forms of animal life.

What are we doing about it? What are we going to do? It would seem wise while we are increasing our armament against our imaginary human foes to put in a modest appropriation every year for warfare on these ubiquitous enemies to our health and our national wealth. Some one suggests that the ancient and honorable profession of rat-catcher still exists, chiefly in the underworld of our great cities, a semi-respectable and marvelously skilled occupation. Why not revive this profession and restore it to the dignity that it enjoyed centuries ago? "So long as such an anachronism as the rat exists, there is no inconsistency in fighting it with a medieval institution like the rat-catcher."

This is very logical reasoning but it may not be the best business management. We live in an age of prevention, so called. That is to say, we like to talk about preventing a whole lot of things that we have found to be almost unbearable. Sometime some of this talk is going to eventuate into acts. Indeed, even the most pessimistic critic must admit that preventive measures are well under way in some lines of sanitation. But the rat doesn't feel the pressure yet, except in a very few quarters. Why not swat the rat?

> Dr. R. H. Creel, of the United States public health service, says that "Of all the parasites that have their being in and around the habitation of man, the rat has less to justify its existence than any other. As devoid of any redeeming traits as the fly, that has been the subject of a nation-wide sanitary crusade, the rat is a greater pest because of its depredations and its possibilities for harm in the transmission and perpetuation of bubonic plague in a community. The latter consideration is of more serious import in seaport towns, wherever they may be, and in those localities where plague has once appeared, but with the world-wide march of bubonic plague in no city should its advent be regarded as improbable. Merely to keep premises clean and free of rubbish will be of but little benefit, as rodents generally, even when abundant rubbish is available, prefer more secure cover, as that beneath floors and within double walls and ceilings. So along with other measures for the destruction of rats all buildings, chicken yards, garbage receptacles, sidewalks and planked areas must be built or repaired to prevent rat harborage. Garbage cans should be made of metal with proper fitting tops."

Let us apply the little knowledge that we now have in carrying on the campaign wherever we happen to be; and let us agitate, agitate, agitate,—until every community will consider the harboring and feeding of these expensive and dirty thieves as beneath its dignity and beyond its means.

IS BATHING A BAD HABIT?

LISTEN to the oracular utterances of *Doctor* !! Elmer Lee, with which he gives the British public a hard jolt, in the magazine called *"Health Culture."*

> Bathing is an acquired habit, unnecessary and even harmful. Cold or hot water showers or sprays, and any form of immersion, will be injurious in the end. Man is an air animal, not a water-beast. An aged woman asked me if it was good practice to chill the human skin with cold water to warm it? Cold bathing is recommended as a body warmer, so is a hot toddy of whisky, also a

cold cocktail of whisky. Man has acquired many conceits. A bath-tub is an enemy in the house. It is expensive and adds to the toil of women. Bathing begets false security against disease, weakens and injures the skin, extracts bodily energy and magnetism, and entails on society a needless habit.—Dr. Elmer Lee, in "Health Culture."

We thought this would be good reading for August. We might just laugh at it and let it pass, for it is plain that the doctor is too much under the spell of the old woman whom he quotes as a backer for his "air animal" theory. But we are not going to let it pass until we have paid our respects to the mossback who passes off such lame logic under the name of "health culture." The fool is known by his folly. He needs no other label. And the worthy Dr. Lee is no exception to the rule, for with his demonstration of what he knows about cleanliness he has given himself away cleaner than a whistle! He says too much.

He says that bathing "extracts bodily energy and magnetism." We congratulate the Doctor if he knows what he is talking about; we don't. Every pseudo-scientist who is short on science and long on lingo likes to yap about *magnetism*. We will bet dollars to doughnuts that this authority doesn't know what magnetism means. If he will kindly show us—as we are from Missouri—any "magnetism" that he may have carefully concealed in his person, and also show us how said "magnetism" can be "extracted" by soaking in water, we will give up bathing for the rest of our lives and, moreover, we will see that he is elected president of the British Medical Association—if we have to walk to England and do it ourselves.

Be not deceived, gentle reader; some of the most arrant nonsense that gets into print nowadays is in the pages of so-called "health" journals and "culture" boomers—of which the above is a sample. Dr. Elmer Lee is an "air animal" all right, just as he claims to be,—of the kind that we call in this country, "hot air."

ORTHODOX AND HETERODOX.

Sounds very serious in hot weather, doesn't it? Well, let us consider a dreadful thing that has just happened in a Pennsylvania hospital.

It was decreed that in this hospital "there must be no card playing."

It is reported that during a recent tour of inspection of the hospital, "a member of the board of managers, and one of the mainstays of the institution," was startled on seeing a nurse indulging in a game of solitaire. Later on during the tour of inspection she entered the room of a friend—a private patient—and here, too, she found the nurse playing solitaire. The patient, who is a prominent society leader, remonstrated, inasmuch as she had employed the nurse, and told her to secure another deck of cards and she would teach her to play "bridge." The board member objected, but it is stated that the patient and her nurse continued to play cards each day during the remainder of their stay in the hospital. It is undoubtedly true that the board member made her objection as a matter of personal belief and principle, but in doing this she seems to have overlooked two things: First, the rights of the patient and her private nurse; second, the fact that no one member of a hospital board has the authority to individually give such an order. It looks like a case of overestimating one's importance and authority.

So says the *International Hospital Record*. As we ourselves have never indulged in the pastimes mentioned, we may be permitted to remark that it looks to us like a case of Phariseeism, and we have yet to see a successful hospital—or church—under the domination of Pharisees. The report fails to tell us what camel the lady manager was swallowing, the while she was straining at the solitaire gnat.

The distress of this hospital is a nice little sermon to us on the unwisdom of requiring other people to "be good" in our own particular way. Sick and convalescent folk are peculiarly sensitive about any interference with their rights to hold their own opinions and practise their own beliefs; life in the hospital subjects them to so many inevitable hardships and privations that they naturally resent all undue restrictions of their personal liberty. And why not? If the hospital accepts "a prominent society leader" as a patient and takes her perfectly good money, let it allow her as many of her own home comforts as are not inconsistent with her recovery. What is the hospital for?

THE NURSE ANESTHETIST AND THE LAW.

We have presented this subject many times from the viewpoint of the physician and the lawyer. Nurses have little to say in this controversy, and it is very much to their credit that they have avoided the discussion of their own rights, leaving it mostly to others to speak for or against them. We find, however, in the *Trained Nurse* for July a very sensible and temperate presentation of the matter, a part of which we are glad to quote with our hearty approval:

> Undoubtedly, some nurses, through long experience, may be able to administer an anesthetic skilfully, much more skilfully, in fact, than some young doctor with less experience, but that fact does not make it according to law in any State. The giving of anesthetics is unquestionably the practice of medicine. It has been urged that nurses administer other drugs, as ordered by physicians, then why not anesthetics? With most other drugs it is possible for a physician to prescribe an exact dosage, and the amount to be given is practically never left to the judgment of the nurse, as is the case when an anesthetic is given. It is also true that in many cases in which the person to be anesthetized is a bad surgical risk, the administration of the anesthetic requires as much skill as does the operation.
>
> The fact that prominent surgeons started the practice of having nurses give anesthetics has helped to popularize the practice, but it does not make it legal.
>
> The practice of giving anesthetics has been heralded as another great opportunity for nurses to specialize in, in the practice of their profession. Perhaps we ought to join in the popular acclaim, but somehow we cannot help urging nurses to be cautious about undertaking this responsibility, which is clearly undertaking the practice of medicine. The time may come when the giving of anesthetics will be legally placed in the hands of nurses, but it has not come yet, and we cannot help a lurking feeling that it ought to remain in the province of practice of medicine, rather than of nursing. All nurses should be taught sufficiently in regard to anesthesia, so that they can assist in time of emergency, *but emergencies and regular routine are two different things.*

MUSICAL MUTILATION.

That is the next thing in order. The problem of making the operating room attractive to the patient is approaching a happy solution. Hereafter when the nervous patient is preparing to go to the hospital, instead of spending her time in giving away her trinkets and dictating the directions for her funeral, she will peruse the hospital list of "records" and select the tunes which she wishes to "accompany" her operation. It is a jolly good idea! With thanks to the *Journal of the American Medical Association,* we are able to give the details in the original:

> *To the Editor*:—For some time I have been employing a phonograph in my operating-room as a means of calming and distracting my patients from the horror of the situation when going under the anesthetic and during operations performed partially or entirely with local anesthesia. The phonograph talks, sings or plays on, no matter how anxious, busy or abstracted the surgeon, anesthetist and assistants may be, and fills the ears of the perturbed patient with agreeable sounds and his mind with other thoughts than that of his present danger. Too often when told to keep up an agreeable conversation with our patients operated on under "local," the assistants merely ask again and again if the sufferer is being hurt or if he feels any pain, thus only adding to the self-consciousness of the patient, and, after weather commonplaces are exhausted, it seems impossible to find a topic for conversation of any sort, and dead silence ensues. It is not uncommon for nervous patients to beg to have the phonograph continue, should it run down, and many of them converse animatedly with the anesthetist on the subject of the pieces being played throughout the entire operation.
>
> I owe to Dr. Burdick, our anesthetist, thanks for his selection of records admirably adapted to the tastes and temperaments of the subjects.
>
> Evan O'Neill Kane, M.D., Kane, Pa.
> Surgeon, Kane Summit Hospital.

The doctor's proposition draws the following cheerful comments, which develop the idea along logical lines.

OPERATING-ROOM SLUMBER SONGS.

To the Editor:—In your issue of June 6, I read with interest Dr. Kane's account of his musical operating-room. No doubt it is an admirable way of assisting the anesthetist, although I can imagine some of the disadvantages. For example, a patient given to dancing might become uncontrollable on hearing the "Argentine Tango," and then, again, the surgical nurse might be the cause of complications were one to play the "Matrimonial Glide." But outside of these unforeseen accidents good results could no doubt be obtained.

As a historical note I would add that Dr. Kane is not a pioneer in this respect. Henri de Mondeville (1260-1320), a shining light in his time and possessed of a most delightful line of sarcasm, advocated the following:

"Keep up your patient's spirits by music of viols and ten-stringed psaltry, or by telling him that he has been elected to a bishopric if a church man, or by forged letters telling him of the death of his enemies." R. W. MENDELSON, M.D.,
Des Moines, Iowa.

Answer.—Apropos of this we quote the following suggestions from B. L. T.'s Line-O'-Type Department of the Chicago *Tribune*.

SELECT YOUR RECORD (June 8).

"I owe to Dr. Burdick, our anesthetist, thanks for his selection of records admirably adapted to the tastes and temperaments of the subjects."—EVAN O'NEIL KANE, M.D., Kane, Pa.

This opens up a new avenue of fancy. When you are laid on the table and the saw is called for, what would be your choice of phonograph records? M. F. votes for "This is the Life."

THE ANESTHESIEST WAY (June 10).

Select you phonograph record before you go "under the knife."

Chick: "You can put me down for 'Good-Bye, Everybody.'"

L. C. W.: "'If You Talk in Your Sleep, Don't Mention My Name.'"

THE ANESTHESIEST WAY (June 12).

When I am on the table
And the surgeon's saw I see,
Let the interne start the record,
"What Will the Harvest Be?"
—MARTHA.

Dandy: "Just Tell Them That You Saw Me."

F. R.: "Please Go 'Way and Let Me Sleep."

W. M. B.: "Any hymn found in the appendix—to be followed by a collection."

THE ANESTHESIEST WAY (June 15).

C. E. B.: Turn on the record, "How happy could I be with Ether were t'other dear charmer away."

P. B. D.: "I Don't Know Where I'm Going, But I'm on My Way."

F. G. F.: "Good Night, Nurse."

M. L. P.: "She Sleeps in the Deep."

THE ANESTHESIEST WAY (June 20).

Prize record, besought by H. M.: "Let a little sunshine in."

We have only this to say,—that if the therapeutic phonograph is no better than the one that is now playing in the next flat while the editor tries hard to think, then death on the operating table would be a sweet relief. But why should we worry? Since the new idea is taking so well in Chicago we presume it will not be long before some of the big hospitals will have a full orchestra to accompany every act in the operating theater program.

NURSES AS CLIMBERS.

WE are not referring now to "social climbers," although some nurses have shown ability on the social ladder. We are calling attention to the climbing necessary in order to get around to the beds of patients in some of the state hospitals of the Empire State. In the *News* published by the Charities Aid Association we find this item:

> The rigid economy necessarily practiced in the state hospitals last year because of inadequate appropriations, was sufficient to jeopardize the welfare of the patients. When a ward is so crowded with beds that the patients can not get into them except over the foot, the attendants can hardly be expected to maintain order at all times. The patients frequently protest against such conditions and discipline is exceedingly difficult to maintain.
>
> This overcrowding is especially serious in the wards where the "disturbed" patients are cared for. In some of these the nurses are unable to reach the bed of the disorderly or abusive patients except by climbing over the beds of other patients.

The same kind of "economy" is debarring thousands of feeble-minded people from the institutions that ought to care for them. False economy often springs from ignorance of the real conditions under which funds are "saved."

> The State is providing for 33,000 insane persons in public institutions, but is only providing for 9,400 feeble-minded. More than half of these are in institutions not designed for their care. Most people consider the insane dangerous, while they think the feeble-minded harmless.
>
> The State is beginning to understand, however, that the feeble-minded boy and girl are many, many times more of a menace to the community than many of the insane now in our State hospitals.

Here is a concrete example of what a "harmless" feeble-minded person may add to the cares of the taxpayer and the philanthropist:

> Mrs. Johnson, of Montgomery County, is a feeble-minded woman, married, and has four young children. She is wholly incapable of providing proper surroundings for her family, so whatever defects the children have by heredity, their environment emphasizes and increases.
>
> When the last baby came, only a few months ago, the father had been away drunk for several days. Not the slightest preparation had been made for the confinement and there was practically no food in the house.

This woman should be in an institution, before she can bear more children to add to the burden of the public, but there is no room in any institution for her.

The menace of the feeble-minded is becoming more serious as our people awake to the burden that they are adding daily to every community. It is not only expedient but highly essential that we should recognize feeble-mindedness wherever it exists and make ample preparations for taking every grown up case into custody, in some way or other, and thus preventing their increase. As for the children, our state institutions are demonstrating how they can be made happy and useful, while they are guarded from harm and temptation to go astray. What we need to-day is more room in these institutions.

Those who know little or nothing about the feeble-minded are apt to treat the matter flippantly, or to adopt the highly optimistic delusion that there are no such people where *they* live. They remind us of the ostrich.

Every nurse is likely to be consulted sometime as to whether some "queer" child is "all right" or not. Let your answer be very guarded; do not pretend to knowledge that you do not possess. Even the doctors make ridiculous blunders in such cases, and you will do the same if you are over confident or anxious to give a comforting answer to a worried parent. As with physical disease so with mental defect,—the future welfare of the child often hinges on a correct diagnosis of his trouble.

CAMP HYGIENE.

By Mary H. Tufts, Trained Nurse, Farmington, Maine.

Each year marks a greater enthusiasm for the pleasures of a vacation spent "in the woods," so to speak; or at inland camps and cottages. And justly so; for a properly-planned vacation of this kind affords a great variety of pleasures, added health, and may be had at a reasonable expense.

But like other pastimes, a camping vacation may be either "overdone or underdone"; and is healthful only in proportion as one exercises common sense and personal hygiene.

Certain hygienic precautions should be observed in camp life; whether one occupies their own camp or cottage, or a hired one, and whether the cottage be located at the shore or inland.

The matter of pure drinking water is very important. If possible, the supply should be obtained from a spring. Whatever the source, the water-supply should be located at least five or six rods from the camp or cottage, and on the "up" side from any source of sewage, as sink-drain or privy.

If the supply is from a well, it should be kept cleaned out, and covered with a ventilated cover. If there is a possible doubt of the purity of the water, it should be boiled.

Many filters cannot be depended upon to remove disease-germs, though they remove certain organic matter.

It is more healthful to have the camp or cottage upon a somewhat elevated spot, to facilitate drainage; for dampness is the cause of many unhealthy conditions. Insects and mosquitoes also breed in damp places and stagnant water.

The camp-building should be twenty or thirty feet from any body of water; otherwise the fogs which arise at night cause unpleasant and unhealthful dampness in the house.

Many of the small inland camps and cottages have no water-system or bath-room fixtures. Earth-closets or vaults are common. These should be kept free from objectionable odors by frequent cleaning out; and by daily use of dry loam or clay, and chloride of lime. Such a vault should be detached from the main camp-building; or, at least, should be separated from it by a corridor, having tightly closed doors at each end. It sohuld be ventilated by a window, and a ventilating-pipe passed through the roof.

The sink drainage should receive careful investigation by all who contemplate hiring a camp, or who are building their own.

Sink-sewage should not empty into small fresh-water streams; nor should the sink-slops be carried through a short pipe, into the ground, or into any receptacle near the underpinning of the camp; where it invariably seeps back toward the building, and decomposes in the soil there.

A deep earth pit may be dug, thirty or forty feet from camp; and the sink-slops conducted to it through tile pipe, having cemented joints. The pit should have either a stout woven-wire covering, or a metal or wooden cover, with a trap through which fresh earth or disinfectants may be introduced. Each day, fresh earth, and dry chloride of lime should be thrown into this pit; or milk of lime may be used; but for campers, chloride of lime is an inexpensive and convenient agent.

Chloride of lime solution, or 6 ounces of 40% formaldehyde solution to 1 gallon of water, should be used liberally, down the sink-pipe each day.

A few good shade-trees about the camp are desirable; but dense shade is not healthful, and favors the breeding of mosquitoes and black flies.

Rain water should not be stored out of doors in open barrels; for insects will lay their eggs in the water. For the same reason, avoid a camping-site near any stagnant body of water.

Rubbish and garbage should be carefully disposed of, so as not to attract flies, or afford a breeding-place for insects. Considerable garbage may be incinerated in the kitchen stove; and the rest should be buried. A pit may be dug at a considerable distance from the camp. It should be three or four feet deep; and each time garbage is deposited there, fresh earth, and a liberal sprinkling of chloride of lime, or milk of lime should be used. When this pit is filled, another can be dug. It is important to cover each deposit of garbage thoroughly. If the earth-closet at camp is not easily kept free from odors, it will be wise to empty all liquid slops in the garbage-pit.

All windows and doors should be well screened; otherwise one's life will be rendered a burden by black flies, mosquitoes, and the ever-present house-flies. Mosquito-candles burned in the sleeping rooms for a short time each night, will usually dispel insects.

The camp should be kept well aired by open windows; the bedding should be aired as often as every other day in the open air and sunshine. Pine or spruce boughs hung up on the walls, give a pleasant and healthful odor. If any rooms seem damp, remedy it by unslaked lime in plates about the room; renewing the lime when it begins to crumble.

A cellar under the camp, if near a body of water, is very damp. It is always best to have it well drained and cemented; and it is absolutely necessary to have any cellar windows fitted with stout frames, covered first with fine wire mosquito-netting, then with an iron lattice or strong woven wire. Otherwise, the predatory animals such as weasels, coons, skunks, mink, etc., will usually prove an almost constant nuisance; gaining entrance to the cellar and preying on food, especially meat or fish which may be stored there.

As a rule, all food stored in a cellar should be kept in covered receptacles; as a damp or uncemented cellar is always full of the spores of moulds and fungi, and other bacteria which contaminate food in open vessels.

Cellar walls and shelves should be whitewashed each year; and if the bottom is uncemented, should be sprinkled with milk of lime or formaldehyde solution, as described elsewhere in this paper.

Powdered charcoal is a valuable agent in preserving meat and fish, and in keeping the ice-box sweet. Dishes of charcoal should be kept, and frequently renewed, in ice-box, cellar, and in food-closets and jars. It may be sprinkled directly onto meat or fish, but being rather hard to remove by washing, is better enclosed in muslin.

Tinned foods should be at once removed from the can as soon as opened; and stored in glass, agateware, or crockery, but never in tin.

If ice is not available, all fresh milk should be scalded, put into a covered, sterile glass jar, and stored in the coolest available spot.

Meat, fish, and in fact any food which has become ever so slightly tainted, should be discarded. It should be remembered that fresh fish decompose rapidly; and fish which has been exposed to the sun for any length of time, is likely to have developed a violent poison.

It will be found a great convenience to have the cellar shelves enclosed by cheese-cloth or mosquito netting, to keep flies away from meat and fish.

Much of the ice harvested from shallow inland ponds is unfit to use by putting directly into beverages. Ice-boxes should be kept very clean by a thorough scrubbing three or four times a week, with hot water and carbonate of soda or sal soda, and by scalding with boiling water, followed by airing out for an hour or more.

Out of door life provides the means to good health, or improved health to those who use these gifts with common sense.

But many people whose usual occupations are of a sedentary nature, make the mistake of greatly over-taxing themselves when on vacation in the country, by at once entering into the most strenuous and excessive muscular exertion, instead of working up to such recreations gradually.

The man or woman who for instance, does office-work, and then as soon as the vacation begins, launches out on long walks, strenuous hill-climbing, or hard rowing or swimming contests in hot weather, may confidently expect unhappy results to follow. If not, it is because kind Providence spares the unwise. Swimming when overheated, and rowing after a full meal are particularly hurtful.

One should not exercise to the point of exhaustion, especially in the hot sun; not go in swimming when over-heated, nor for an hour or more after a hearty meal.

A hurried or very hearty meal, taken when one is exhausted by strenuous muscular exercise, is likely to result in a more or less serious indigestion, especially in one having weak digestive powers.

The vacationist should remember that there is a "happy medium" between a silly introspection and an utter disregard of health and comfort.

Of late it has been noticed that persons who have practised swimming much, in fresh-water ponds, especially when the water was low, have contracted symptoms akin to articular rheumatism. This joint-irritation was thought by some physicians to have been due to an infection by certain bacteria and decomposing vegetable and organic matter in the water. With this possible effect in view, one should avoid bathing in brackish or stagnant pond water.

Garbage and waste should never be deposited in the water of any pond or stream.

So-called "sun headaches," should be avoided by use of colored glasses.

Bites of insects are a part of camp life; but not necessarily a constant accompaniment. The bites of black flies may be very painful or oven suppurate. One should go to camp provided with plenty of good "fly-dope" and "mosquito candles"; also with some sothing lotion for sunburn, and other reliable emergency remedies.

At one time, sunburn to the extent of a lobster-red or mahogany-brown complexion was considered a very desirable badge of the Summer's outing. But common sense has taught us that very deep sunburn always causes more or less permanent injury to the texture of the skin; and deep blistering may result in serious dermatitis.

Persons unused to much walking, usually get blistered feet on their first few long "tramps." Unless the walking-boots fit well, and have heavy soles, the arches of the feet may break down also.

Boots for rough wear, for both men and women, should be thick-soled, broad-heeled, with heel coming well under the instep; and should have a bellows-tongue, to prevent entrance of water. A good water-proofing liquid should be applied before worn the first time, to soften and preserve the leather, and to make them impervious to moisture.

For woman's wear, for tramping, boating, and fishing, the dress should have a short skirt, reaching only to tops of boots; and bloomers for wear under the dress-skirt, are much more comfortable and sensible than petticoats.

The use of a good foot soap is to be recommended to all who engage in out-of-door sports. Blistered feet are at least very painful; and also liable to get infected, and cause more serious trouble.

The foot soap, used as directed, will usually prevent blisters; but if they do form in spite of this, they should be dressed twice daily, with a bit of absorbent cotton, smeared with some good ointment as resinol, boric acid, or unguentine; and the cotton held in place by strips of surgeon's plaster.

A saturated solution of epsom salts is excellent for poisoning of ivy. The poisoned surfaces should be often bathed, or covered with compresses wet in the solution.

If one is to camp at a distance from medical aid, it is always best to go equipped with an emergency outfit. The family doctor should be consulted as to desirable antiseptics, liniments, ointments, headache-remedies, and digestive remedies; but certain simple and harmless applications I may suggest as a routine outfit.

The following articles and remedies will be found practical:

Surgeons' plaster; absorbent cotton and surgeons' gauze; some good antiseptic ointment; three, 5-yard roller-bandages; an alcohol stove and denatured alcohol to burn in it; a fountain syringe; hot-water bottle; thermos bottle; tincture of iodine;

mustard; witch hazel; grain alcohol; spirits of camphor; peroxide of hydrogen, or dioxogen; brandy; aromatic ammonia; compound tablets of rhubarb and soda; chemically-pure glycerine; epsom salts; castor oil; spirits of turpentine; several cakes of good foot-soap; powdered borax; some safe headache remedy, and digestive agent (both of which should be prescribed by a physician); pure aqua ammonia; a large jar of white vaseline; a good supply of soothing complexion-lotions, and a large bundle of soft, clean cotton cloth and wool flannel.

A solution made by adding one teaspoonful of tincture iodine to one quart of boiled water, is one of the safest and most effective antiseptics in which to soak a wound. As a final dressing, the full-strength iodine should be painted around and over the wound, and a dry, clean compress bandaged on. This dressing may be renewed each day, until the wound is healing well.

For indigestion, one teaspoonful each of ginger and baking-soda, is effective. Two compound rhubarb and soda tablets, repeated every two hours, will relieve bowel-trouble, colic caused by intestinal indigestion, or fermentative indigestion.

For insect stings and bites, apply saturated solution of epsom salts, pure glycerine, diluted aqua ammonia, or spirits camphor.

For sore throat, use a gargle of one part peroxide of hydrogen or dioxogen to three parts of water; or borax-water, or borax and glycerine.

A mixture of one part spirits turpentine to six parts of white vaseline, makes an effective outward application for sprained joints, muscular rheumatism, neuralgia, colic, cold in chest, croup, or over a bruise if the skin is not broken. After rubbing it well into the skin, the painful area should be covered with hot, moist flannels; using care not to burn the invalid.

In depression from heat-stroke, weak heart-action, or other accident, a teaspoonful of aromatic ammonia may be given to an adult, and one-quarter teaspoonful to a child. It should be diluted with one-fourth glassful of cold water.

Glycerine and grain alcohol form a very soothing application for deep sunburn. Saturated solution of epsom salts (all that will dissolve in the desired amount of water) is a good application for ivy poisoning, burns, or other inflammations of the skin. It should be applied on soft cloths, renewed as soon as dry.

Mustard may be urgently needed for a paste, plaster, or an emetic. One tablespoonful in a glassful of tepid water forms an effective emetic.

Festering or suppurating wounds, or stings of insects, may be treated with pure peroxide of hydrogen, or dioxogen.

A daily painting of the painful or lame area, with tincture of iodine, relieves rheumatic and neuralgic pain and lameness, soreness in the chest, and sprains.

In heat-stroke or sun-stroke, an ice-cap should be applied to the head; aromatic ammonia given, and a hot-water bottle put at the feet.

A mixture of equal parts of castor oil and glycerine makes an ideal laxative, and often corrects summer-complaint in young children.

So much for the emergency outfit for campers; but,—

"'Twere wisdom to retain the health we have,
By using just a Grain of Common Sense."

NURSING FIVE GENERATIONS IN ONE FAMILY.

THERE are many smart people in this progressive age who honestly doubt the existence of any real virtue in the "family nursing" of the sick which still survives, we are told, in certain old-fashioned communities—mostly in the country and in backwoods towns where the modern graduate has not yet come to stay. The same distrust is extended in full measure to each and every "practical" woman who presumes to tend the sick without the preliminary hospital service which wins the all-conquering diploma.

Before allowing our admiration of the graduate to run away with our judgment we should pause just a moment and reflect. Some one cared for the sick—even for some of us—before graduate nurses were subject to hurry-up calls by telephone. Some one, untrained and long since forgotten, cared for our parents and grandparents, and excellently, too, as results proved.

Our readers who have followed with interest the enlightening address of Mr. Bradley, in the last two numbers of THE GAZETTE, and who feel the force of his plea

for "organized neighborliness," will read eagerly the following sketch which we take from an old number of *The News Letter* entitled:

"OLDTIME NURSING IN NEW ENGLAND,"

By Alfred Worcester, M.D., of Waltham, Mass.

"Besides the joyfulness of recoveries, there were then as now the joyous welcomings of new life into the world. Upon such occasions the neighbor nurse we are remembering was superb. Her previous calls upon the expectant mother were not for condolence but to congratulate and encourage. She used to say that there was a heavenly mother and child companionship that could then be realized by those who made light of their discomforts, and that there was a special safeguarding of those that are willing to be gently led.

"Well do her children remember her many a time returning after perhaps several days' absence, not exhausted as would be expected but exhilarated by having shared a new mother's joy that a child was born into the world. To one of her sons, who she prayed might be a physician, she used to tell how great opportunities a good doctor has at such times of helping where help is sorely needed, and when in later years occasionally he had his own mother as his obstetric nurse, when he realized her unstinted devotion of heart and soul in lending her own splendid strength to the laboring patient's relief, and when he saw her loving radiance in washing and dressing the new born child, his pride in scientific nursing was modified by his admiration for the old time neighborly nursing that now, alas, is fast disappearing.

"It is of course true that no people, no more than any individual, can ever go backward, can ever repeat the past; but that does not involve the sacrifice of one's whole inheritance. It is a thousand pities that modern nurses, instead of scorning old time nursing as of no possible value, have not sought out and garnered for the use of future nurses all that was known of the art before training schools began.

"The first specialization of nursing in New England was, as we have just seen, the choice of some in the community who were by common consent held to be especially fitted for such neighborly service. It was left for them to select and to teach their successors. The young folks so selected were proud to be asked to assist as night watchers, and thankful to be taught by their experienced elders.

"Then another step towards specialization was taken when working women were induced 'to go out nursing' for their living. Only poor widows and spinsters were thus commissioned. Such service at first was only occasional. Between their times of nursing they 'took in sewing,' or helped at house-cleaning, or busied themselves in their own small homes. These women became the professed nurses, the experienced nurses, or, as they now best like to be called, the untrained nurses.

"They must not be compared with the wretched hospital nurses who preceded the training schools. They were an entirely different set of women. Thoroughly respectable and trustworthy they were always, often kindhearted and hard working, and sometimes teachable. Many of these untrained nurses are still in active service and doing very good work. Indeed, in only a few of the smaller country towns have modern trained nurses made any headway in displacing these "old-timers," and in the cities they are still the only dependence of moderately well-to-do families; but they are fast passing off the stage. Who will take their place? Who now will learn to do such work as theirs, for such modest wages as they command? This is a most serious question for sociologists.

"As the untrained nurses have so often been maligned, nicknamed after that monster Sairey Gamp, and used as a dark background for the graduating-day laudations of modern nurses, it seems only fitting in this sketch of New England nursing to describe at least one of them as she was known and loved in this neighborhood.

"Her name was Mary K. Green, and her little gravestone says she died in 1884, aged 73 years. She was born in one of the up country villages of Massachusetts, the oldest of seven children, on a poor farm where it was a hard struggle to get food enough for the family. When Mary was only twelve her mother died, leaving a baby daughter, Ruth, with five brothers in between. For four years Mary did all the housework for this family. She then started out to earn her own living and to help support the old home. She found work in a farmer's family in Waltham, where she slaved from four in the morning until well into the evening. Besides the ordinary housework, as it now is counted, she had the churning and cheese

making, the poultry raising and the kitchen gardening to do. For the first year she had ninepence a week, for the second year a shilling, and then, when she went to live with another family, 'Marm Fiske' gave her a silver thimble, which for long years was her most treasured possession.

"In her new situation she had an easier time of it. But, besides the ordinary work of the farmhouse, she had the care of the old grandfather in his dotage, and of many of the little grandchildren who were sent back from their city homes to build up in the country, and she was also often called upon for a few weeks' special service in one after another of the daughter's homes when there was sickness or any extra stress. As the grandchildren grew up and married she extended her visiting services to their families, and before her labors ended she cared for many of the great grand-children's children. Her service to this one family was thus given to five generations.

"All of her scanty wages went to the support of those of her own family who continued desperately poor. She provided a small cottage home for her only sister, who for many years was a hopeless consumptive. From the families where she worked she collected all sorts of no longer wanted material, which she always declared would be of use in the old up country home. At making over worn out garments she was a past master. She was never much on style. To her a button was a button, and if she could not find two alike for the garment she was making over, it mattered not, she would make their buttonholes of different sizes to fit. She was always in a hurry in the long days from dawn till dark, and, in winter, from the hour of summer sunrise throughout the short days and long evenings. On Sundays she went "to meeting" and thoroughly enjoyed it. In her six days of unremitting labor she well earned her Sabbath rest. Her religion was of the practical sort,—kind to everybody, devoted to the helpless, rigidly honest. A terribly hard worker she was, but a great lover of fun, never over-awed by 'stuck-up folks,' a perfect mine of quaint stories and of good old Yankee common sense.

"For the last half of her life Mary Green was an 'untrained' nurse. How did she become one, and of what sort was her nursing? During her early years the only nurses were the neighbor nurses already described. Often in the families where she was working she served as an assistant watcher; but it was not until she was of middle age that she was taught the art of nursing. Nor was she in any hurry to undertake this responsibility. But finally she was persuaded by an expectant mother, who promised to teach her what nursing she herself would need, and then would recommend her, and teach her at these cases what nursing was needed for them.

"In this way Miss Green, as she then came to be called, was launched into her nursing career. After her long preparation of helpful service, it was no wonder she soon became a famous nurse. Fortunate indeed were the families that found her in their times of need. For not only would she do the strictly nursing work in tending the patient, but she also delighted in doing the family washing before breakfast, the ironing in the forenoon, and the mending before or after nightfall, with the baby on her lap. Much of the cooking and general housework she would do between times. The amount of her day's work was astounding, nor were her patients ever neglected.

"While faithful to old doctors whom she knew, and always punctilious in giving the medicine as ordered, she was a terror to the younger physicians for whom she had little use. To one of them, who incautiously asked 'how is your patient?' her snappy answer was, 'that is for you to find out'; and again when he asked if the fine breast bandage, he had so proudly applied the day before, had proved a comfort, she admitted she had taken it off directly after he left the house. She 'didn't like them things,' she added.

"For the clinical thermometer, and for modern antiseptics, she had supreme contempt. Soap suds were cleansing enough for anybody sick or well, she would say; 'and as if any fool ought not to be able to tell without thermometers whether the patient or the chamber were too cold or too warm.' It was no use to allow fruit or any other 'outlandish diet' to her patients. She believed in gruels and broths, fresh air and perfect quiet. What she believed in would be given; and nothing else. 'If you want any other kind of nursing, get it,' was her ultimatum.

"Though she died long years ago, after a day or two of pneumonia, she is still missed, and she deserves a more fitting memorial."

Questions and Answers.

The following answers are not "official." They are prepared for the editor.

UNIVERSITY OF THE STATE OF NEW YORK, 21ST NURSES' EXAMINATION.

MEDICAL NURSING AND NURSING OF CHILDREN.

Tuesday, January 27, 1914—9.15 a. m. to 12.15 p. m. only.

Answer 10 *of the following questions. Each complete answer will receive* 10 *credits. Papers entitled to* 75 *or more credits will be accepted.*

1. What articles should the nurse provide before giving a child a bath?

Ans. Castile or lanolin soap, olive oil, vaseline or benzoinated lard, dusting powder, small squares of soft cloth, umbilical dressing for the new-born, warmed clothing, towels soft and warm, foot-tub containing water at temperature of about 105° Fahr.

2. Outline the general nursing care of a case of whooping cough in a four year old child.

Ans. Isolate the child until recovery; at the same time give him all the fresh air possible, keeping him out of doors when weather permits. During febrile stage keep in bed. As vomiting is almost inevitable, give easily digested, nourishing food at frequent intervals and in small quantities, to avoid overloading of the stomach. The child's surroundings should favor quiet and rest as the cough is likely to be very exhausting and child needs to recuperate strength every day. A well fitted abdominal binder is of great use.

3. What special qualifications should a nurse who has the care of sick children possess?

Ans. Honesty and common sense come first. Gentleness, tact, patience, and quiet manners are desirable. The faculty of getting on with children, amusing them and keeping them occupied, includes all of the above—and more.

4. What are the bad effects to be watched for and guarded against in giving hot packs or baths?

Ans. Faintness, over-heating, exhaustion, —soft, compressible or intermittent pulse,— pallor of lips and face, air-hunger, restlessness, burns and scalds.

5. Mention *four* bad effects that may result from neglect of a fever patient's mouth.

Ans. Sordes, dry and fissured tongue, ulcers, infectious foci from which other organs may become septic.

6. What is marasmus? Give symptoms.

Ans. Progressive wasting, especially of infants; pedatrophy. Starvation symptoms, emaciation, senile appearance; superficial breathing, bad pulse; weak, whining cry; exhaustion.

7. Name important points in the nursing care of marasmus.

Ans. Good air, out of doors if possible; good food, breast-milk if possible; cleanliness; oil massage; warm, comfortable clothing; the best of nursing care. Weak and delicate babies are sometimes trotted to death in efforts to amuse or quiet them.

8. What are the *three* most important considerations in the nursing of all forms of anemia?

Ans. Proper food, fresh air, prolonged rest with careful nursing care.

9. How should catheters be prepared for use?

Ans. Rubber catheters: Insert small funnel and wash 2 minutes in running cold water; soak in cold water 3 to 5 minutes; scrub in warm suds; rinse in cold running water; wash in weak formalin solution (2% to 3%) running it through with funnel; soak in same solution ½ hour; rinse in cold water; boil 3 minutes; dry and put away. Before using again, boil 3 minutes and keep in boric acid solution or sterile towel. Glass or metallic catheters, after cleaning well, are boiled ten minutes before putting away or using again.

10. Mention some points to remember regarding the care of the catheter while catheterizing.

Ans. The catheter should touch nothing that is not *surgically clean.* It must be handled with gentleness—not forced. In a female the vulva must be kept well parted so as not to touch the catheter. When urine begins to flow the catheter must not be pushed farther. When flow stops, the catheter should be slightly withdrawn and held a moment until flowing ceases again. In removing the catheter, the outlet must be stopped by the finger to prevent spilling the last few drops of urine. It is well to prepare two or more catheters for use in

order that a clean one may be at hand in case of soiling or contaminating the first one. Glass catheters are wet in boric acid solution before inserting. Rubber or metallic catheters are lubricated with a little sterile oil or vaselin.

11. How would you take a throat culture?

Ans. First see that no antiseptic gargles or washes have been used for at least two hours past. Seat patient in good light with mouth wide open. Control tongue by tongue depressor held in your left hand. Take sterile swab in right hand and pass to the throat without touching tongue or lips or teeth and swab the area intended, with a rotary motion so as to bring all sides of swab into contact with area. Remove swab without touching any part of mouth or lips. Remove tongue depressor. Take culture tube in left hand and remove cotton plug, holding it between the middle finger and ring finger of the right hand; then insert swab into culture tube and rub gently and thoroughly over culture medium, taking care to spread the substance on swab well over the medium but not to puncture the medium. Insert cotton plug into culture tube and replace swab in the container and plug as before using. During these manipulations the swab is held constantly in the right hand and not allowed to touch anything but the throat and the culture medium. After taking culture be sure that it is properly labeled and prepared for sending to the laboratory, and that the swab is so disposed of that it will not be used a second time.

12. Mention *three* special points in the nursing of dysentery.

Ans. Put on flannel binder and keep patient warm and quiet; give bland liquid diet; keep patient strictly clean and sterilize all discharges as well as all utensils and instruments used in the case.

13. What are the signs of hemorrhage in typhoid fever?

Ans. Sudden faintness, pallor, rapidly increasing pulse-rate, air-hunger, falling temperature, passage of tar-colored stools or blood clots.

14. Describe the appearance of blood in hemorrhage from the lungs. Define the nurse's duties in such an emergency.

Ans. Bright red and frothy. Put patient to bed immediately, with shoulders elevated; give abundance of fresh air—out of doors if possible—and keep patient quiet as possible and free from alarm. Give cracked ice by mouth. Keep the feet and legs warm. An ice bag over the chest may check hemorrhage, or it may aggravate the cough. Send for the doctor, and have ready a quantity of warm, sterilized, normal salt solution in case the doctor should order its use.

15. Briefly outline the general care of a child having any contagious or infectious disease.

Ans. Isolate patient until all danger of contagion is passed. Thoroughly disinfect all discharges from patient and all materials and articles that have been used about the patient. Allow no foods, medicines, or other things to be taken from the sick room to other parts of the house, except for destruction or sterilization. The nurse must exercise the same care in regard to her own person and clothing, to avoid infecting herself or those whom she meets outside the sick room. Patient must be kept scrupulously clean, particular attention being given to skin, mouth, throat, and any wounds or abrasions of the body. More than usual care must be given to feeding, elimination and general welfare.

OBSTETRIC NURSING

For Female Nurses.

Wednesday, January 28, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 *of the following questions. Each complete answer will receive* 10 *credits. Papers entitled to* 75 *or more credits will be accepted.*

1. What antiseptic solutions should be prepared for use in the care of the mother and the newborn infant?

Ans. This depends upon the doctor and the nature of the case. Probably boric acid solution will be in demand. The other solutions that may be wanted are: bichlorid of mercury, carbolic acid, lysol or creolin, formalin, chinosol, alcohol, silver nitrate, argyrol, or some other silver salt.

2. Give the strength of each solution mentioned in answer to question 1.

Ans. Bichlorid of mercury, 1:1000 or 1:1500. Carbolic acid, 5 per cent. Lysol, 1 per cent. to 2 per cent. Creolin, same as lysol. Formalin, ½ dram to 1 dram per pint of sterile water. Chinosol, 1:500 to 1:2000, according to use intended. Alcohol, 75 per cent. Silver nitrate, 1 per cent. Argyrol, 10 per cent.

3. Describe the brim of the pelvis.

Ans. The edge of the superior strait of the pelvis is called the *brim,* or *inlet,* and marks the junction of the false pelvis above with the true pelvis below. The pelvis narrows at the brim, and is shaped like a flattened heart, with the broadest diameter from right to left. The brim is formed behind (dorsally) by the promontory and wings of the sacrum; laterally and ventrally by the two innominate bones.

4. Give a full description of the structure and the function of the Fallopian tubes.

Ans. Two tubes about four inches long and about the size of a crow's quill, lying between the layers of the broad ligament, and extending from the superior angles of the uterus to the sides of the pelvis. The uterine end of the canal is of extremely small calibre, and about two inches from the uterus it gradually widens, forming a trumpet-shaped abdominal opening with fringed edges, called the *fimbriated extremity.* One of the fringes, in each tube, is attached to the ovary. The tube is made up of three principal layers; the serous layer is on the outside; next is the muscular layer made of longitudinal and circular fibres of involuntary muscle; inside is the mucous layer which is lined with ciliated columnar epithelium, from the fimbriated extremity, which communicates with the peritoneal cavity, to the opposite end which opens into the cavity of the uterus. Thus, the tubes are the only structures in the body forming direct connection between a mucous and a serous cavity. They are oviducts, their function being to convey the ovum from the ovary down to the uterus; the ciliated epithelium lining the tubes wafts the ovum in the direction of the uterus.

5. Define (*a*) mastitis, (*b*) primipara, (*c*) puerperium, (*d*) obstetrics, (*e*) embryo.

Ans. (*a*) Inflammation of the mammary gland. (*b*) A woman who is the mother of but one child. (*c*) The period of confinement; childbed period. (*d*) The science and art of assisting women through pregnancy, labor and the puerperium; the art of midwifery. (*e*) the fetus before the end of the third month of development.

6. Give the three stages of labor.

Ans. First, from the beginning of labor-pains to the complete dilation of the mouth of the womb, and called the period of dilation. Second, from complete dilation of the cervix to complete expulsion of the child, and called the period of expulsion. Third, from the expulsion of the child until the expulsion of the after-birth and the contraction of the uterus, and called the placental stage.

7. What is meant by a "blue" baby?

Ans. An infant affected with cyanosis; strictly speaking the term applies to cases of congenital heart disease.

8. Give the symptoms of puerperal infection.

Ans. Malaise, chills, fever, rapid pulse; usually pain around the uterus, alteration of lochia, or stoppage of lochia; signs of suppuration or peritonitis may develop.

9. Describe the routine care of a patient on the eighth day after a normal delivery.

Ans. Patient remains in bed all day, except while using the commode. At about 7 o'clock the breasts are inspected and the child nursed. After this comes breakfast and the usual morning care of the mother, the bed and the room. The mother has a full bath or a sponge bath with alcohol and water. It is well to follow this with gentle massage. The room is well ventilated and well lighted. Visits of friends are very much restricted in number and length. The nurse takes temperature, pulse, and respiration three times and records them on the history-sheet. She also keeps record of patient's general condition, sleep (in hours) diet, bowel movements, urinations (noting amount), use of catheter and enema, lochial discharge, administration of medicines, doctor's visits, and other items of importance. In particular: the breasts are examined to see that they are free from abnormal conditions, kept clean and comfortable; the nipples are cleansed with boric acid, not touching them with the hands if it can be avoided; if the hands must come in contact with the nipples they are first scrubbed until aseptically clean. The baby is nursed every three hours, the nipples being cared for each time in the routine manner. Two or three times in the day the vulva is inspected, cleansed and covered with a clean aseptic pad. The discarded pads are kept for the doctor's inspection. If nurse soils her hands with lochia she must disinfect

them at first opportunity, and before touching the baby or the mother's breasts. The mother may have mixed diet of plain, easily digested food, and should drink an abundance of water.

10. Outline the daily care of an infant eight days old.

Ans. At about 7 o'clock the baby is put to the breast, and every three hours through the day; twice in the night ought to suffice for feeding. The mouth should be cleansed before and after nursing, using boric acid solution, *without friction* or other injury to the mucous membrane. A sponge bath is given in the morning followed by the usual care of the skin. The umbilical cord is inspected and dressing renewed if soiled or in need of renewal. The eyes are inspected and the lids wiped gently with cotton soaked in boric acid solution, unless a more active treatment is needed. After the bath the child is weighed. Between feedings he is given water to drink. The child spends most of the day, while quiet, in the room with its mother, but at night is taken to another room where its cries will not disturb the mother's rest. The nurse keeps a history-chart on which she records daily the temperature, pulse, respirations, weight, sleep, nursing, crying, times of urinating and movements of the bowels. Any medicines or treatments given must also be recorded. The nurse must see that the child is kept warm and dry, and does not suffer from neglect.

11. What is the nursing treatment for enlarged breasts in an infant?

Ans. Bathe, anoint gently with camphorated oil, cover with pad of cotton and cover firmly with binder. Handle child carefully to avoid injury to breast and in a week or less the enlargement will have been cured.

12. Describe the nursing care of ophthalmia neonatorum.

Ans. If one eye only is infected, cover the well eye with cotton kept in place by adhesive plaster; inspect the well eye every four hours for signs of infection; tie baby's arms to his sides to prevent his rubbing eye and infecting other places. Apply ice cold pledgets to eyes, changing every minute. Frequent irrigations may be given with boric acid or normal salt solution, using a fountain syringe. Applications of silver nitrate, argyrol, protargol, atropin, etc., may be required at longer intervals. Treatment of this form of ophthalmia requires continuous, thorough work, often for days at a time, and is enough to keep two nurses busy. They must be extremely cautious about touching their own eyes without first sterilizing their hands thoroughly.

13. State the nursing care after a primary perineorrhaphy.

Ans. Be careful not to pull on stitches and thus irritate the wound or perhaps open it. If ends of stitches cause pain, wrap them in sterile gauze. If the vulva is sore and swollen, apply compresses soaked in warm boric acid solution. Cleanse the wound and surrounding parts occasionally with soap and water and report to the doctor any unfavorable conditions.

14. Give the care necessary for the infant's feeding bottles and nipples.

Ans. Clean bottles and all other utensils used in preparing food, using soda solution and a brush. Rinse and sterilize. After filling, plug with cotton and sterilize again. Cool quickly and keep on ice till needed. Nipples, after use, are washed well in solution of soda carbonate, turned inside out, boiled five minutes or longer, rinsed and kept in boric acid solution until needed.

15. What is an ectopic gestation?

Ans. Pregnancy in which the embryo is not inside the uterus.

GENITO-URINARY NURSING.

For Male Nurses.

Wednesday, January 28, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 *of the following questions. Each complete answer will receive* 10 *credits. Papers entitled to* 75 *or more credits will be accepted.*

1. Define (*a*) hypospadias, (*b*) epispadias.

2. How would you prepare a patient for removal of vesical calculus?

3. What could a nurse do to relieve the pain of a prolapsed anus?

4. What is the lithotomy position.

5. What is incontinence of urine?

6. Give some results of carelessness in catheterizing.

7. What are the symptoms of cystitis?

8. What preparation should the nurse make for the doctor in a case of urethral stricture?

9. Describe irrigation of the bladder.

10. What is genito-urinary surgery and what organs are considered in this branch of surgery?

11. Why does not the urine return to the kidneys when the bladder is much distended?

12. How are the various kinds of catheters sterilized.

13. What is the minimum period of incubation of syphilis?

14. What is the maximum period of incubation of syphilis?

15. What is the average period of incubation of syphilis?

MATERIA MEDICA

Wednesday, January 28, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 *of the following questions. Each complete answer will receive* 10 *credits. Papers entitled to* 75 *or more credits will be accepted.*

1. Define (*a*) decoctions, (*b*) infusions, (*c*) tonics, (*d*) syrups.

2. What is the ordinary dose of croton oil and how should it be administered?

3. If a strength of *m* v represents gr. 1/150, how many minims will be required to make a dose of gr. 1/60?

4. What is the dose of syrup of ipecac for an infant?

5. How many drams are there in 2/3 of a pint?

6. What in fluid measure is allowed as the equivalent of the liter?

7. Express in full (*a*) b. i. d., (*b*) q. h., (*c*) a. c.

8. Mention (*a*) one hypnotic, (*b*) one stomachic, (*c*) one purgative. State the usual dose of each.

9. In giving drugs to produce sleep, mention *three* conditions that should be secured in order to make them effective.

10. How much mustard to a teacup of water should be used in order to produce emesis? If necessary to repeat the dose, how often and how many times should it be repeated?

11. Mention a drug having a cumulative action.

12. Mention *one* medicine that should always be given through a glass tube.

13. What are the toxic symptoms of hydrated chloral?

14. Define (*a*) antiperiodics, (*b*) carminatives, (*c*) anesthetics.

15. Mention (*a*) a drug that will produce dilation of the pupil, (*b*) a drug that will produce contraction of the pupil.

Have your answers to these questions ready for comparison with the answers to be given in a later number of THE GAZETTE.

NO WOOD IN THE UP-TO-DATE KITCHEN.—It is entirely practicable, with present-day methods of construction, to avoid the use of wood in a food-producing establishment.—*Chicago Sanitary Bulletin.*

THE BEST LIQUID BEEF.—If one really wants "liquid beef," the only genuine way of getting it of any value is to press out the juice from a fresh piece of beef and prepare it as wanted.—*Literary Digest.*

CONSTIPATION IS A SIN.—Constipation, the bane of civilization is generally the result of neglect of the bowels and of wrong eating; and cathartic medicines, through abuse have become a plague.—*Monthly Bulletin, Indiana State Board of Health.*

A FLYLESS TOWN.—Time was when the extermination of mosquitos or the elimination of the fly were considered a huge joke. But time has shown what can be done.

Everybody can help to make Buffalo a flyless town by:

Keeping premises clean so that all breeding places are eliminated.

Buying at least one fly trap and keeping it working during the fly season.

That's all there is to it.

What's the use of "swat" one fly and let a million escape?

Better watch the million than to swat the one.—*Buffalo Sanitary Bulletin.*

PERSONALS.

Mountainside Hospital, Montclair, N. J., Nurses Receive Diplomas.

Graduation exercises of the class of 1914 of the Mountainside Hospital Training School were held in Unity Church, Tuesday evening, May 19th, 1914.

Five young women, having completed their three years course, including three months service in the New York Lying-in Hospital, were awarded their diplomas and presented with the Mountainside Hospital Nurses pins and duly enrolled with the eighty-eight other alumnae graduates, since the school's beginning nineteen years ago.

Mrs. Franklin H. Hooper, president of the board of governors, acted as chairman. Dr. William T. Wilcox of the Westminster Presbyterian Church of Bloomfield, offered the prayer for the success of the future careers of the graduating class.

The address to the graduating class was delivered by Henry E. Jenkins, of Montclair. In the absence of Dr. J. S. Brown, the president of the visiting staff, Dr. L. W. Halsey first spoke a few words of congratulations and advice, dwelling particularly on the sacred code of honor and the strictly confidential relationship of nurse and patient. He then presented them with their diplomas.

The class consisted of Miss Evelyn W. Stuart, of Montclair. Miss Ruth Dodge, of Glenridge. Miss Marjory E. Ball, of Newark. Miss Gladys L. Fields, of Canada. Miss Isabella M. Cameron, of Scotland.

Following the exercices a reception, with dancing and refreshments was given the members of the class, and their friends at the Evans Home.

Alumni Dinner in Honor of Graduate Nurses.

The Mountainside Hospital Alumni Association gave a dinner and dance in honor of the graduating class of 1914 at the Hotel Montclair, Thursday evening, May 28th, 1914.

Dinner was served in the private dining room. The covers were laid for twenty.

Miss Willer, the President, presided and gave a short address to the graduates, wishing them every success in their career.

Among the graduates were:

Miss Isabella Cameron.
Miss Evelyn Stuart.
Miss Marjorie Ball.
Miss Gladys Field.
Miss Ruth Dodge.

Following the dinner, all enjoyed the dancing.

Married.

June 1, in Troy, N. Y., Bessie Moran Hanley, school nurse, class 1910, Troy Hospital, to Francis Ryan. Mr. and Mrs. Ryan will reside in Rochester, N. Y.

June 8, at Watervliet, N. Y., Mary A. Dahlem, resirent nurse, County Hospital, class 1911, Troy Hospital, to Francis Sweeney. Mr. and Mrs. Sweeney will reside in Troy, N. Y.

A party of four, including the Misses Annette Fiske, Estelle Ferguson, Mary I. Skinner and Minnie Goodnow sailed May 23 for Liverpool on the Devonian. They expect to take an extensive trip both in Great Britain and on the continent.—*News Letter.*

Miss Mary Parsons of Waltham Training School, has accepted a position as head nurse at Dr. Hall's Sanatorium, Devereaux Mansion, Marblehead, Mass.

The Prolific Fly.—There is no race suicide in the fly.—*Buffalo Sanitary Bulletin.*

Cure by Resting.—No more efficient method exists of lowering blood-pressure and giving the body an opportunity to readjust disturbed functions than prolonged rest in bed. Even when complete rest is not desirable the patient's daily life should be regulated so as to allow for periods of rest and quiet during the day and at least eight hours in bed every night. A principle of fundamental importance in the management of hypertension is the prevention of all forms of sudden strain and the avoidance of everything which tends to produce bodily or mental fatigue.—George Morris Piersol, M.D. *Therapeutic Gazette.*

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DETROIT, MICHIGAN

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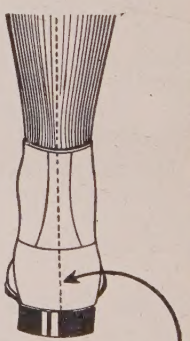

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are of immediate benefit in all cases of structural foot weakness, including "turned" ankles, weak ligaments, falling arch and flat-foot.

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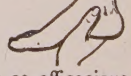

Coward Arch Support Shoes are of special assistance in treating arch and ankle weakness of growing feet, and are as efficacious in preventing the foot troubles of childhood as in their treatment and correction.

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TREATISE on "FLAT-FOOT" MAILED UPON REQUEST

TECHNICALITIES.

ITEMS of value to nurses in their work will be welcome to this column.

COW'S MILK FOR CALVES.—The reason so much difficulty is had in feeding cow's milk to infants, is that digestion in the calf is different from infantile digestion; cow's milk is physiologically adapted to a calf's stomach, human milk to the infant's stomach.—HENRY DWIGHT CHAPIN, M.D., *Jour. Mich. State Med. Soc.*

MOSQUITOS IN CITIES.—Every pool of stagnant water, every pail, can, dish or basin containing water accessible to mosquitos, is a breeding place for them, whether in city or country.

Necessary water tanks, on roofs or any other place out of doors, should therefore be screened.

Stagnant water which cannot be removed or abated should have crude oil or kerosene oil poured on its surface frequently. This will spoil it as a breeding place for mosquitos.

The oily surface prevents the mosquito from rising to the surface for air, and without air it cannot live.—*Buffalo Sanitary Bulletin.*

AVIATION SICKNESS.—Horace Walpole, writing on the progress of aviation in his day, says: "If there were no air sickness, and I were to go to Paris again, I would prefer a balloon to the packet boat, and had as lief roost in an oak as sleep in a French inn, though I were to caw for my breakfast like the young ravens." And, says the *Globe,* as might be expected, the progress of aviation is developing its own peculiar sickness. Already this has come under the notice of the medical profession, and Dr. Dastre has been discoursing on the subject of air sickness before the French Academy. Aviators who fly high or come down quickly are specially subject to it. The symptoms are more severe than those experienced in balloons, and more or less resemble mountain sickness. On rising to a height of 5,000 feet the breath is shorter and the heart beats faster, though generally there is no palpitation. Above 6,000 feet there is buzzing in the ears. A serious symptom is a tendency to sleep.—*British Journal of Nursing.*

THE PHYLACOGEN TREATMENT OF HAY FEVER.

While Mixed Infection Phylacogen was formally introduced to the medical profession in 1912, it was some months later before adequate data as to its value in the treatment of hay fever were available. In 1913 hundreds of cases were reported, details of many of them appearing in the medical press during the latter months of that year. The results from these clinical observations were highly significant, showing a surprisingly large percentage of recoveries and warranting the belief that in Mixed Infection Phylacogen the physician had acquired a formidable weapon for his fight with one of the most stubborn diseases that he is called upon to treat.

Mixed Infection Phylacogen is administered hypodermatically. The initial dose should be small, the usual procedure being to begin with a 2-Cc. dose subcutaneously or a ½-Cc. dose intravenously. The reactions occur more quickly, and are ordinarily more severe, following intravenous injection.

"In giving the subcutaneous injection," one writer explains, "I usually select as a site the insertion of the deltoid or the area just below the scapula. The latter seems to be the ideal spot, as absorption takes place very readily and the complaints from the local reaction are much less. I repeat my injection either daily or on alternate days, the interval to be determined by the clinical condition of the patient. It is seldom necessary to administer more than four to six injections, the symptoms often disappearing after the second or third injection. Almost immediate relief is noted by the patient. The irritating discharges from the eyes and nose are diminished in amount, the sneezing is lessened, the dyspnea is relieved, and the patient usually sleeps comfortably. All patients that I have treated successfully have remained well through the season. I have yet to record a failure, but I have not had a sufficient number of this class of cases as yet to warrant a positive claim that this remedy will act in all forms of this disease."

Mixed Infection Phylacogen is supplied in 10-Cc. bulbs. As is doubtless well known to most physicians, it is a Parke, Davis & Co. product.

A Wholesome Summer Drink

The excessive use of iced drinks, during hot weather, is a matter that most people do not stop to consider. They drink what they want, regardless of consequences.

Even the use of plain ice water, in excess, is known to be harmful, if not actually dangerous in many instances. The drug, *caffein*, in iced drinks, tea, coffee and the "artificial" *caffein*-bearing beverages only adds to the injury possible.

A wholesome, cool drink may be quickly prepared by dissolving some ***Instant Postum,*** a teaspoonful in a half cup of hot water for each glass. Add cold water and cracked ice. With sugar and lemon, the new flavour is delightful, and the drink is not only refreshing but nourishing.

For patients who crave a cool drink, physicians can prescribe ***Instant Postum*** prepared as above, knowing that this palatable, nourishing beverage is free from *caffein* or any other harmful substance.

"There's a Reason" for POSTUM

The ***Clinical Record*** for Physicians' bedside use together with samples of Instant Postum, Grape-Nuts and Post Toasties for personal and clinical examination, will be sent on request to any physician who has not yet received them.

Postum Cereal Co., Ltd., Battle Creek, Mich., U. S. A.